CALL BLUESTAKES
@ 811 AT LEAST 48 HOURS
PRIOR TO THE
COMMENCEMENT OF ANY
CONSTRUCTION.

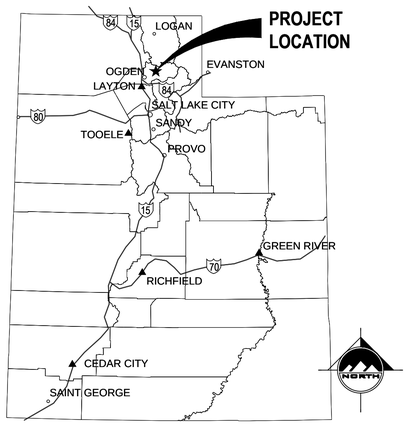
Know what's below. Call before you dig.

COBABE RANCH AND EDEN CROSSING
WELL HOUSE AND BOOSTER STATION

(PWS. NO. 29132)
EDEN, UTAH

PERMIT SET

DATE PRINTED
July 22, 2025



LOCATION MAP
NO SCALE

DRAWING INDEX

NOTICE TO DEVELOPER/CONTRACTOR

UNAPPROVED DRAWINGS REPRESENT WORK IN PROGRESS, ARE SUBJECT TO CHANGE, AND DO NOT CONSTITUTE A FINISHED ENGINEERING PRODUCT. ANY WORK UNDERTAKEN BY DEVELOPER OR CONTRACTOR BEFORE PLANS ARE APPROVED IS UNDERTAKEN AT THE SOLE RISK OF THE DEVELOPER, INCLUDING BUT NOT LIMITED TO BIDS, ESTIMATION, FINANCING, BONDING, SITE CLEARING, GRADING, INFRASTRUCTURE CONSTRUCTION, ETC.

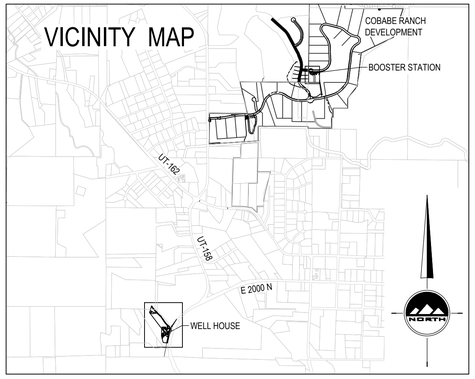
UTILITY DISCLAIMER

THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND / OR ELEVATIONS OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE LOCAL UTILITY LOCATION CENTER AT LEAST 48 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATIONS OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.

NOTICE TO CONTRACTOR

ALL CONTRACTORS AND SUBCONTRACTORS PERFORMING WORK SHOWN ON OR RELATED TO THESE PLANS SHALL CONDUCT THEIR OPERATIONS SO THAT ALL EMPLOYEES ARE PROVIDED A SAFE PLACE TO WORK AND THE PUBLIC IS PROTECTED. ALL CONTRACTORS AND SUBCONTRACTORS SHALL COMPLY WITH THE "OCCUPATIONAL SAFETY AND HEALTH REGULATIONS OF THE U.S. DEPARTMENT OF LABOR AND THE STATE OF UTAH DEPARTMENT OF INDUSTRIAL RELATIONS CONSTRUCTION SAFETY ORDERS." THE CIVIL ENGINEER SHALL NOT BE RESPONSIBLE IN ANY WAY FOR THE CONTRACTORS AND SUBCONTRACTORS COMPLIANCE WITH SAID REGULATIONS AND ORDERS.

CONTRACTOR FURTHER AGREES TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB-SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY, THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS, AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD THE OWNER AND THE CIVIL ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE OWNER OR ENGINEER.



GENERAL NOTES

1. ALL WORK SHALL CONFORM TO APWA STANDARDS & SPECIFICATIONS.
2. CALL BLUE STAKES AT LEAST 48 HOURS PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION ACTIVITIES.

BENCHMARK ELEVATION = CONTROL POINT GE CAP, NEAR EAST QUARTER CORNER OF NORTHEAST QUARTER CORNER OF SECTION 26,TOWNSHIP 7 NORTH, RANGE 1 EAST SALT LAKE PRINCIPAL MERIDIAN ELEV. = 5321.77'.

CALL BLUESTAKES
@ 811 AT LEAST 48 HOURS
PRIOR TO THE
COMMENCEMENT OF ANY
CONSTRUCTION.

Know what's below. Call before you dig.

BENCHMARK

CONTROL POINT GE CAP
NEAR EAST QUARTER CORNER OF
NORTHEAST QUARTER CORNER OF SECTION
26,TOWNSHIP 7 NORTH, RANGE 1 EAST SALT
LAKE PRINCIPAL MERIDIAN

ELEV = 5321.77'

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PHONE: 801.897.4880

COBABE RANCH AND EDEN CROSSING
WELL HOUSE AND BOOSTER STATION
(PWS. NO. 29132)
EDEN, UTAH

PROFESSIONAL ENGINEER
7-22-25
7014610-2202
RYAN W. BRADLEY
EXP. 3-31-2027
STATE OF UTAH

PERMIT SET 7/22/2025

COVER

PROJECT NUMBER	PRINT DATE
14018B	2025-07-22
PROJECT MANAGER	DESIGNED BY
R. BRADLEY	G. GAVIN

ABBREVIATIONS

@	AT
ø	DIAMETER
%	PERCENTAGE
'	FEET
"	INCHES
3PH	THREE PHASE POWER
AB	ANCHOR BOLT
ABUT	ABUTMENT
AC	ASBESTOS CEMENT PIPE OR ASPHALT CONCRETE
ADT	AVERAGE DAILY TRAFFIC
APPROX	APPROXIMATELY
APWA	AMERICAN PUBLIC WORKS ASSOCIATION
AL	AIR LINE
ALUM	ALUMINUM
AR	ACCESSIBLE ROUTE
ASPH	ASPHALT
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
AWWA	AMERICAN WATER WORKS ASSOCIATION
AZ	AZIMUTH
BAL	BALANCE
BEG	BEGINNING / BEGIN
BFC	BACK FACE OF CURB
BLD FLG	BLIND FLANGE
BLDG	BUILDING
BLM	BUREAU OF LAND MANAGEMENT
BM	BENCHMARK
BLK	BLOCK
BOD	BIOCHEMICAL OXYGEN DEMAND
BOS	BOTTOM OF STEP
BOT	BOTTOM
BRG	BEARING
BSMT	BASEMENT
BTWN	BETWEEN
BVC	BEGIN VERTICAL CURVE
C	CURVE
C&G	CURB AND GUTTER
CALC	CALCULATED
CB	CATCH BASIN
C-C	CENTER TO CENTER
CCW	COUNTER CLOCKWISE
CF	CURB FACE
CFS	CUBIC FEET PER SECOND
CIP	CAST IRON PIPE
CJ	CONSTRUCTION JOINT
C	CENTER LINE
CLR	CLEARANCE
CMP	CORRUGATED METAL PIPE
CMP-A	CORRUGATED METAL PIPE - ARCH
CO	CLEAN OUT
COB	CLEAN OUT BOX
COL	COLUMN
COMM	COMMUNICATION
CONC	CONCRETE
CONN	CONNECT
CONT	CONTINUOUS
COP	CENTER OF PIPE
COR	CORNER
CTR	CENTER
CU FT	CUBIC FEET
CU YD	CUBIC YARD
CULV	CULVERT
CW	CLOCKWISE
D	DEGREE
DET	DETAIL
DIA	DIAMETER
DI	DUCTILE IRON
DIP	DUCTILE IRON PIPE
DIST	DISTANCE
DL	DRAIN LINE
DMH	DRAINAGE MANHOLE
DN	DOWN
DW	DRINKING WATER
DWG	DRAWINGS
DWV	DRAIN WASTE VENT
E	EAST
EA	EACH
EB	ELECTRICAL BOX
EG	EDGE OF GRAVEL
ELEC	ELECTRIC / ELECTRICAL
ELEV	ELEVATION
EMB	EMBANKMENT
EMH	ELECTRICAL MANHOLE
ENGR	ENGINEER
ENT	ENTRANCE
EO	EDGE OF OIL
EOA	EDGE OF ASPHALT
EQUIP	EQUIPMENT
ES	EDGE OF SHOULDER
EST	ESTIMATE
EVC	END OF VERTICAL CURVE
EW	EACH WAY
EXC	EXCAVATION
EX	EXISTING
EXIST	EXISTING
FD	FLOOR DRAIN
FDN	FOUNDATION
FEN COR	FENCE CORNER
FE	FIRE EXTINGUISHER
FF	FINISH FLOOR
FFC	FRONT FACE OF CURB
FG	FINISH GRADE
FH	FIRE HYDRANT
FIN	FINISH
FL	FLOW LINE / FLANGE
FLR	FLOOR
FRP	FIBERGLASS REINFORCED PIPE
FT	FEET
FTG	FOOTING
G	GAS
GA	GAGE / GAUGE
GALV	GALVANIZED
GB	GRADE BREAK
GEN	GENERAL
GF	GARAGE FLOOR
GLB	GLUED LAMINATED BEAM
GM	GAS METER
GSP	GALVANIZED STEEL PIPE
GV	GATE VALVE
HC	HANDICAP / HYPOCHLORITE
HDG	HOT DIPPED GALVANIZED
HDWL	HEADWALL
H&T	HUB & TACK
HORIZ	HORIZONTAL
HP	HIGH POINT
HSS	HOLLOW STRUCTURAL SECTION
HWL	HIGH WATER LEVEL
HWY	HIGHWAY
HX	HEAT EXCHANGER
HYD	HYDRANT
ID	INSIDE DIAMETER
IE	INVERT ELEVATION
IJ	ISOLATION JOINT
IN	INCH
INFO	INFORMATION
INV	INVERT
IRR	IRRIGATION
JCT	JUNCTION
K	RATE OF VERTICAL CURVATURE
L	LENGTH
LB	POUND
LD	LAND DRAIN
LF	LINEAR FEET
LIC	LICENSE
LIN	LINEAR / LINEAL
LP	LOW POINT / LIGHT POLE
LS	LAND SURVEYOR
LT	LEFT
LWL	LOW WATER LEVEL
MAG	MAGNETIC
MAINT	MAINTENANCE
MATL	MATERIAL
MAX	MAXIMUM
MB	MACHINE BOLT
MH	MANHOLE
MI	MILE
MIN	MINIMUM
MISC	MISCELLANEOUS
MJ	MECHANICAL JOINT
MKR	MARKER
ML	MIXED LIQUOR
MON	MONUMENT
MPH	MILES PER HOUR
N	NORTH
NG	NATURAL GROUND
NIC	NOT IN CONTRACT
NPW	NON-POTABLE WATER
NO OR #	NUMBER
NTS	NOT TO SCALE
OC	ON CENTER
OCEW	ON CENTER EACH WAY
OD	OUTSIDE DIAMETER
OFF REV	OFFICE REVISION
O-O	OUTSIDE TO OUTSIDE
OHP	OVERHEAD POWER
ORIG	ORIGINAL
OSB	ORIENTED STAND BOARD
PC	POINT OF CURVATURE / PRESSURE CLASS
PCC	POINT OF COMPOUND CURVATURE
PD	POND EFFLUENT
PE	PLANT EFFLUENT / PLAIN END
PERT	PERFORATED
PI	POINT OF INTERSECTION / PRIMARY INFLUENT
PIV	POST INDICATOR VALVE
PL	PROPERTY LINE
POB	POINT OF BEGINNING
POC	POINT ON CURVATURE
PP	POWER POLE
PRC	POINT OF REVERSE CURVATURE
PRO	PROPOSED
PROJ	PROJECT
PROP	PROPERTY
PS	PUMP STATION
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	POINT OF TANGENCY
PVC	POINT OF VERTICAL CURVATURE / POLYVINYL CHLORINE
PVI	POINT OF VERTICAL INTERSECTION
PVMT	PAVEMENT
PVT	POINT OF VERTICAL TANGENCY
PW	POTABLE WATER
QTY	QUANTITY
R	RADIUS / RANGE
RAS	RETURN ACTIVATED SLUDGE
RCP	REINFORCED CONCRETE PIPE
RCCP	REINFORCED CONCRETE CYLINDER PIPE
RD	ROOF DRAIN
REF	REFERENCE
REINF	REINFORCED
REQ'D	REQUIRED
REV	REVISION
RJ	RESTRAINED JOINT
ROW	RIGHT OF WAY
RP	REFERENCE POINT
RR	RAILROAD
RT	RIGHT / ROUTE
R/W	RIGHT OF WAY
S	SLOPE / SOUTH
SAN	SANITARY
SAN SWR	SANITARY SEWER
SCH	SCHEDULE
SD	STORM DRAIN
SE	SECONDARY EFFLUENT
SEC	SECONDARY
SEC COR	SECTION CORNER
SHT	SHEET
SJ	SAWED JOINT
SKT	SOCKET
SL	SOLIDS LINE
SOVFL	SURFACE OVERFLOW
SPECS	SPECIFICATIONS
SQ	SQUARE
SQ FT	SQUARE FEET
SQ YD	SQUARE YARDS
SS	SANITARY SEWER / STAINLESS STEEL
ST	STREET
STA	STATION
STD	STANDARD
STL	STEEL
STN STL	STAINLESS STEEL
STRUCT	STRUCTURE
SW	SIDEWALK
SWR	SEWER
SWL	SECONDARY WATER LINE
T	TOWNSHIP / TELEPHONE
TAN	TANGENT
TBC	TOP BACK OF CURB
TEMP	TEMPORARY
TELE	TELEPHONE / TELEGRAM
THD	THREADED
THK	THICK
TKN	TOTAL KIELDAHL NITROGEN
TOA	TOP OF ASPHALT
TOC	TOP OF CONCRETE
TOF	TOP OF FOUNDATION / TOP OF FOOTING
TOG	TOP OF GRATE / TOP OF GRAVEL
TOP	TOP OF PIER
TOW	TOP OF WALL
TOS	TOP OF STEP / TOP OF SLAB
TSS	TOTAL SUSPENDED SOLIDS
TYP	TYPICAL
UB	UTILITY BOX
UG	UNDERGROUND
UNO	UNLESS NOTED OTHERWISE
UW	UTILITY WATER
VC	VERTICAL CURVE
VERT	VERTICAL
VIC	VIC COUPLING
VOL	VOLUME
VPI	VERTICAL POINT OF INTERSECTION
VPC	VERTICAL POINT OF CURVE
VPT	VERTICAL POINT OF TANGENCY
VSS	VOLATILE SUSPENDED SOLIDS
W	WEST / WATER
WAS	WASTE ACTIVATED SLUDGE
WIV	WALL INDICATOR VALVE
WL	WATER LINE
WM	WATER METER
WO	WEIR OVERFLOW
W/	WITH
W/O	WITHOUT
XING	CROSSING
X-SEC	CROSS SECTION
YH	YARD HYDRANT

LEGEND

SECTION CORNER
EXISTING MONUMENT
PROPOSED MONUMENT
EXISTING REBAR AND CAP
SET ENSIGN REBAR AND CAP
EXISTING WATER METER
PROPOSED WATER METER
EXISTING WATER MANHOLE
PROPOSED WATER MANHOLE
EXISTING WATER BOX
EXISTING WATER VALVE
PROPOSED WATER VALVE
PROPOSED WATER VALVE REDUCER
EXISTING FIRE HYDRANT
PROPOSED FIRE HYDRANT
PROPOSED FIRE DEPARTMENT CONNECTION
EXISTING SECONDARY WATER VALVE
PROPOSED SECONDARY WATER VALVE
EXISTING IRRIGATION BOX
EXISTING IRRIGATION VALVE
PROPOSED IRRIGATION VALVE
EXISTING SANITARY SEWER MANHOLE
PROPOSED SANITARY SEWER MANHOLE
EXISTING SANITARY CLEAN OUT
EXISTING STORM DRAIN CLEAN OUT BOX
PROPOSED STORM DRAIN CLEAN OUT BOX
EXISTING STORM DRAIN INLET BOX
EXISTING STORM DRAIN CATCH BASIN
PROPOSED STORM DRAIN CATCH BASIN
EXISTING STORM DRAIN COMBO BOX
PROPOSED STORM DRAIN COMBO BOX
EXISTING STORM DRAIN CLEAN OUT
EXISTING STORM DRAIN CULVERT
PROPOSED STORM DRAIN CULVERT
TEMPORARY SAG INLET PROTECTION
TEMPORARY IN-LINE INLET PROTECTION
ROOF DRAIN
EXISTING ELECTRICAL MANHOLE
EXISTING ELECTRICAL BOX
EXISTING TRANSFORMER
EXISTING UTILITY POLE
EXISTING LIGHT
PROPOSED LIGHT
EXISTING GAS METER
EXISTING GAS MANHOLE
EXISTING GAS VALVE
EXISTING TELEPHONE MANHOLE
EXISTING TELEPHONE BOX
EXISTING TRAFFIC SIGNAL BOX
EXISTING CABLE BOX
EXISTING BOLLARD
PROPOSED BOLLARD
EXISTING SIGN
PROPOSED SIGN
EXISTING SPOT ELEVATION
PROPOSED SPOT ELEVATION
EXISTING FLOW DIRECTION
EXISTING TREE
DENSE VEGETATION

EXISTING EDGE OF ASPHALT
PROPOSED EDGE OF ASPHALT
EXISTING STRIPING
PROPOSED STRIPING
EXISTING FENCE
PROPOSED FENCE
EXISTING FLOW LINE
PROPOSED FLOW LINE
GRADE BREAK
EXISTING STORM DRAIN LINE
PROPOSED STORM DRAIN LINE
ROOF DRAIN LINE
CATCHMENTS
HIGHWATER LINE
EXISTING SANITARY SEWER
PROPOSED SANITARY SEWER LINE
PROPOSED SAN. SWR. SERVICE LINE
EXISTING LAND DRAIN LINE
PROPOSED LAND DRAIN LINE
PROPOSED LAND DRAIN SERVICE LINE
EXISTING CULINARY WATER LINE
PROPOSED CULINARY WATER LINE
PROPOSED CULINARY WATER SERVICE LINE
EXISTING SECONDARY WATER LINE
PROPOSED SECONDARY WATER LINE
PROPOSED SEC. WATER SERVICE LINE
EXISTING IRRIGATION LINE
PROPOSED IRRIGATION LINE
EXISTING OVERHEAD POWER LINE
EXISTING ELECTRICAL LINE
EXISTING GAS LINE
EXISTING TELEPHONE LINE
ACCESSIBLE ROUTE
SAW CUT LINE
STRAW WATTLE
TEMPORARY BERM
TEMPORARY SILT FENCE
LIMITS OF DISTURBANCE
EXISTING WALL
PROPOSED WALL
EXISTING CONTOURS
PROPOSED CONTOURS
BUILDABLE AREA WITHIN SETBACKS
PUBLIC DRAINAGE EASEMENT
EXISTING ASPHALT TO BE REMOVED
PROPOSED ASPHALT
EXISTING CURB AND GUTTER
PROPOSED CURB AND GUTTER
PROPOSED REVERSE PAN CURB AND GUTTER
TRANSITION TO REVERSE PAN CURB
CONCRETE TO BE REMOVED
EXISTING CONCRETE
PROPOSED CONCRETE
BUILDING TO BE REMOVED
EXISTING BUILDING
PROPOSED BUILDING

NOTE: MAY CONTAIN SYMBOLS OR ABBREVIATIONS THAT ARE NOT USED IN THIS PLAN SET.

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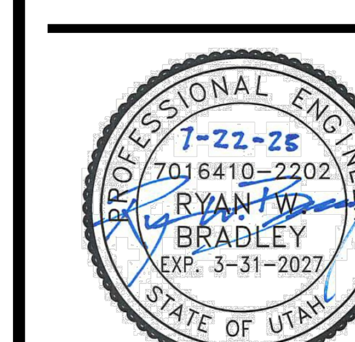
PHONE: 801.897.4880

COBABE RANCH AND EDEN CROSSING WELL HOUSE AND BOOSTER STATION
(PWS. NO. 29132)
EDEN, UTAH



PERMIT SET 7/22/2025

ABBREVIATIONS AND LEGEND

PROJECT NUMBER	PRINT DATE
14018B	2025-07-22
PROJECT MANAGER	DESIGNED BY
R. BRADLEY	G. GAVIN

C-001

GENERAL NOTES

1. ALL CONSTRUCTION MUST STRICTLY FOLLOW THE STANDARDS AND SPECIFICATIONS SET FORTH BY: DESIGN ENGINEER, LOCAL AGENCY JURISDICTION, APWA (LATEST EDITION), THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (M.U.T.C.D.), AND OTHER REGULATORY AGENCIES EXERCISING AUTHORITY OVER ANY PORTION OF THE WORK WHERE APPLICABLE. THE ORDER LISTED ABOVE IS ARRANGED BY SENIORITY. THE LATEST EDITION OF ALL STANDARDS AND SPECIFICATIONS MUST BE ADHERED TO. IF A CONSTRUCTION PRACTICE IS NOT SPECIFIED BY ANY OF THE LISTED SOURCES, CONTRACTOR SHALL CONTACT DESIGN ENGINEER FOR DIRECTION.

2. ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH THESE CONTRACT DOCUMENTS, LOCAL JURISDICTION REQUIREMENTS, STATE REGULATIONS, AND THE MOST RECENT EDITIONS OF THE FOLLOWING: THE INTERNATIONAL PLUMBING CODE, UTAH DIVISION OF DRINKING WATER REGULATIONS, AND APWA MANUAL OF STANDARD PLANS AND SPECIFICATIONS. THE CONTRACTOR SHALL ADHERE TO ALL ABOVE-MENTIONED DOCUMENTS UNLESS OTHERWISE NOTED AND APPROVED BY THE ENGINEER.

3. SPECIFIC NOTES AND DETAILS SHALL TAKE PRECEDENCE OVER GENERAL NOTES, TYPICAL DETAILS, AND SPECIFICATIONS.

4. THE CONTRACTOR SHALL REFER TO THE TECHNICAL PROVISIONS FOR INFORMATION NOT COVERED BY THESE GENERAL NOTES OR DRAWINGS.

5. THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS BEFORE SUBMITTING A BID OR PRICE TO THE OWNER AND SHALL NOTIFY OWNER OF ANY DISCREPANCIES OR CONFLICTS BEFORE PROCEEDING WITH THE WORK OR SUBMITTING THE BID.

6. PRIOR TO STARTING CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THAT ALL REQUIRED PERMITS AND APPROVALS HAVE BEEN OBTAINED. NO CONSTRUCTION OR FABRICATION SHALL BEGIN UNTIL THE CONTRACTOR HAS RECEIVED AND THOROUGHLY REVIEWED ALL PLANS AND OTHER DOCUMENTS APPROVED BY ALL OF THE PERMITTING AUTHORITIES.

7. ALL DIMENSIONS, GRADES, AND UTILITY DESIGN SHOWN ON THE PLANS SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. CONTRACTOR SHALL NOTIFY THE ENGINEER IF ANY DISCREPANCIES EXIST BETWEEN THE ACTUAL CONDITIONS AND INFORMATION SHOWN ON THE DRAWINGS, PRIOR TO PROCEEDING WITH CONSTRUCTION FOR NECESSARY PLAN OR GRADE CHANGES. NO EXTRA COMPENSATION SHALL BE PAID TO THE CONTRACTOR FOR WORK HAVING TO BE REDONE DUE TO THE DIMENSIONS OR GRADES SHOWN INCORRECTLY ON THESE PLANS, IF SUCH NOTIFICATION HAS NOT BEEN GIVEN.

8. CONTRACTOR SHALL PROVIDE A CONSTRUCTION SCHEDULE IN ACCORDANCE WITH LOCAL AGENCY JURISDICTION, STATE, OR COUNTY REGULATIONS FOR WORKING IN THE PUBLIC WAY.

9. THE CONTRACTOR SHALL PROVIDE AND BE RESPONSIBLE FOR THE TEMPORARY ERECTION OF BRACING AND SHORING AS REQUIRED FOR STABILITY OF STRUCTURES AND EXCAVATIONS DURING ALL PHASES OF CONSTRUCTION. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR CONFORMING TO LOCAL AND FEDERAL CODES GOVERNING SHORING AND BRACING OF EXCAVATIONS AND TRENCHES AND FOR THE PROTECTION OF WORKERS.

10. THE CONTRACTOR SHALL TO KEEP ALL CONSTRUCTION ACTIVITIES WITHIN THE APPROVED PROJECT LIMITS. THIS INCLUDES, BUT IS NOT LIMITED TO VEHICLE AND EQUIPMENT STAGING, MATERIAL STORAGE AND LIMITS OF TRENCH EXCAVATION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN PERMISSION AND/OR EASEMENTS FROM THE APPROPRIATE GOVERNING ENTITY AND/OR INDIVIDUAL PROPERTY OWNER(S) FOR WORK OR STAGING OUTSIDE OF THE PROJECT LIMITS.

11. PROJECT HORIZONTAL AND VERTICAL DATUM ARE SHOWN ON SHEET C-100.

12. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO ADJACENT SURFACE IMPROVEMENTS.

13. CONTRACTOR SHALL BE RESPONSIBLE FOR CORRECTING ANY SETTLEMENT OF OR DAMAGE TO EXISTING UTILITIES.

14. THE CONTRACTOR SHALL FURNISH ALL MATERIALS TO COMPLETE THE PROJECT.

15. THE LOCATIONS OF UNDERGROUND FACILITIES SHOWN ON THESE PLANS ARE BASED ON FIELD SURVEYS AND LOCAL UTILITY COMPANY RECORDS. IT SHALL BE THE CONTRACTOR'S FULL RESPONSIBILITY TO CONTACT THE VARIOUS UTILITY COMPANIES TO LOCATE THEIR FACILITIES PRIOR TO PROCEEDING WITH CONSTRUCTION. NO ADDITIONAL COMPENSATION SHALL BE PAID TO THE CONTRACTOR FOR DAMAGE AND REPAIR TO THESE FACILITIES CAUSED BY THEIR WORK FORCE. CONTRACTOR SHALL START INSTALLATION AT LOW POINT OF ALL NEW GRAVITY UTILITY LINES.

16. NO CHANGE IN DESIGN LOCATION OR GRADE SHALL BE MADE BY THE CONTRACTOR WITHOUT THE WRITTEN APPROVAL OF THE PROJECT ENGINEER.

17. NATURAL VEGETATION AND SOIL COVER SHALL NOT BE DISTURBED PRIOR TO ACTUAL CONSTRUCTION OF A REQUIRED FACILITY OR IMPROVEMENT. MASS CLEARING OF THE SITE IN ANTICIPATION OF CONSTRUCTION SHALL BE AVOIDED.

18. CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING, MAINTAINING, OR RESTORING ALL MONUMENTS AND MONUMENT REFERENCE MARKS WITHIN THE PROJECT SITE. THE CONTRACTOR SHALL CONTACT THE CITY OR COUNTY SURVEYOR FOR MONUMENT LOCATIONS AND CONSTRUCTION DETAILS.

19. CONTRACTOR TO LAY OUT AND POTHOLE FOR ALL POTENTIAL CONFLICTS WITH UTILITY LINES ON- OR OFF-SITE AS REQUIRED PRIOR TO ANY CONSTRUCTION, AND THE CONTRACTOR WILL VERIFY DEPTHS OF UTILITIES IN THE FIELD BY POTHOLING A MINIMUM OF 300 FEET AHEAD OF PIPELINE CONSTRUCTION TO AVOID CONFLICTS WITH DESIGNED PIPELINE GRADE AND ALIGNMENT. IF A CONFLICT ARISES DUE TO THE CONTRACTOR'S NEGLIGENCE TO POTHOLE UTILITIES, THE CONTRACTOR SHALL RESOLVE THE CONFLICT WITHOUT ADDITIONAL COST OR CLAIM TO THE OWNER OR ENGINEER.

20. ANY AREA OUTSIDE THE LIMIT OF WORK THAT IS DISTURBED SHALL BE RESTORED TO ITS ORIGINAL CONDITION AT NO COST TO OWNER.

21. THE CONTRACTOR SHALL CONSULT ALL OF THE DRAWINGS AND SPECIFICATIONS FOR COORDINATION REQUIREMENTS BEFORE COMMENCING CONSTRUCTION.

22. AT ALL LOCATIONS WHERE EXISTING PAVEMENT ABUTS NEW CONSTRUCTION, THE EDGE OF THE EXISTING PAVEMENT SHALL BE SAWCUT TO A CLEAN, SMOOTH EDGE.

23. ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH THE MOST RECENT, ADOPTED EDITION OF ADA ACCESSIBILITY GUIDELINES.

24. CONTRACTOR SHALL, AT THE TIME OF BIDDING AND THROUGHOUT THE PERIOD OF THE CONTRACT, BE LICENSED IN THE STATE OF UTAH AND SHALL BE BONDABLE FOR AN AMOUNT REQUIRED BY THE OWNER.

25. CONTRACTOR SHALL PROVIDE ALL WATER, POWER, SANITARY FACILITIES AND TELEPHONE SERVICES AS REQUIRED FOR THEIR USE DURING CONSTRUCTION.

26. CONTRACTOR SHALL ADEQUATELY SCHEDULE INSPECTION AND TESTING OF ALL FACILITIES CONSTRUCTED UNDER THIS CONTRACT. ALL TESTING SHALL CONFORM TO THE REGULATORY AGENCY'S STANDARD SPECIFICATIONS. ALL RE-TESTING AND/OR RE-INSPECTION SHALL BE PAID FOR BY THE CONTRACTOR.

27. IF EXISTING IMPROVEMENTS NEED TO BE DISTURBED AND/OR REMOVED FOR THE PROPER PLACEMENT OF IMPROVEMENTS TO BE CONSTRUCTED BY THESE PLANS, THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS FROM DAMAGE. COST OF REPLACING OR REPAIRING EXISTING IMPROVEMENTS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEMS REQUIRING REMOVAL AND/OR REPLACEMENT. THERE SHALL BE NO EXTRA COST DUE TO THE CONTRACTOR FOR REPLACING OR REPAIRING EXISTING IMPROVEMENTS.

28. WHENEVER EXISTING FACILITIES ARE REMOVED, DAMAGED, BROKEN, OR CUT DURING THE INSTALLATION OF THE WORK COVERED BY THESE PLANS OR SPECIFICATIONS, SAID FACILITIES SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE WITH MATERIALS EQUAL TO OR BETTER THAN THE MATERIALS USED IN THE ORIGINAL EXISTING FACILITIES. THE FINISHED PRODUCT SHALL BE SUBJECT TO THE APPROVAL OF THE OWNER, THE ENGINEER, AND THE RESPECTIVE REGULATORY AGENCY.

29. CONTRACTOR SHALL MAINTAIN A NEATLY MARKED SET OF FULL-SIZE RECORD DRAWINGS SHOWING THE FINAL LOCATION AND LAYOUT OF ALL STRUCTURES AND OTHER FACILITIES. RECORD DRAWINGS SHALL REFLECT CHANGE ORDERS, ACCOMMODATIONS, AND ADJUSTMENTS TO ALL IMPROVEMENTS CONSTRUCTED. WHERE NECESSARY, SUPPLEMENTAL DRAWINGS SHALL BE PREPARED AND SUBMITTED BY THE CONTRACTOR. PRIOR TO ACCEPTANCE OF THE PROJECT, THE CONTRACTOR SHALL DELIVER TO THE ENGINEER ONE SET OF NEATLY MARKED RECORD DRAWINGS SHOWING THE INFORMATION REQUIRED ABOVE. RECORD DRAWINGS SHALL BE REVIEWED AND THE COMPLETE RECORD DRAWING SET SHALL BE CURRENT WITH ALL CHANGES AND DEVIATIONS REDLINED AS A PRECONDITION TO THE FINAL PROGRESS PAYMENT APPROVAL AND/OR FINAL ACCEPTANCE.

30. WHERE THE PLANS OR SPECIFICATIONS DESCRIBE PORTIONS OF THE WORK IN GENERAL TERMS BUT NOT IN COMPLETE DETAIL, IT IS UNDERSTOOD THAT ONLY THE BEST GENERAL PRACTICE SHALL PREVAIL AND THAT ONLY MATERIALS AND WORKMANSHIP OF THE HIGHEST QUALITY SHALL BE USED.

31. ALL EXISTING GATES AND FENCES SHALL REMAIN UNLESS OTHERWISE NOTED ON PLANS. THE CONTRACTOR SHALL PROTECT ALL GATES AND FENCES FROM DAMAGE.

32. ALL EXISTING TREES SHALL REMAIN UNLESS OTHERWISE NOTED ON PLANS. THE CONTRACTOR SHALL PROTECT ALL TREES FROM DAMAGE.

33. THE CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH ALL OSHA REQUIREMENTS ON THE PROJECT SITE.

34. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN ANY EQUIPMENT NECESSARY TO DEWATER EXCAVATIONS AS NOTED ON THE PROJECT DRAWINGS.

35. THE CONTRACTOR SHALL NOTIFY BLUESTAKES 1-800-662-4111 AT LEAST 48 HOURS PRIOR TO BEGINNING EXCAVATION. THE CONTRACTOR SHALL LOCATE EXISTING WATER LINE AND OTHER UTILITIES BOTH VERTICALLY AND HORIZONTALLY. IF DISCREPANCIES, CONFLICTS OR UNFORESEEN CONDITIONS ARE DISCOVERED, THE CONTRACTOR SHALL IMMEDIATELY CONTACT ENGINEER FOR RESOLUTION.

36. ALL CONSTRUCTION SHALL CONFORM TO APPLICABLE SECTIONS OF THE UTAH DIVISION OF DRINKING WATER SERIES 500 RULES, DRINKING WATER FACILITY CONSTRUCTION, DESIGN AND OPERATION.

UTILITY NOTES

1. PRIOR TO COMMENCING ANY WORK, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO HAVE EACH UTILITY COMPANY LOCATE, IN THE FIELD, THEIR MAIN AND SERVICE LINES. THE CONTRACTOR SHALL NOTIFY BLUE STAKES AT 1-800-662-4111 AT LEAST 48 HOURS IN ADVANCE OF PERFORMING ANY EXCAVATION WORK. THE CONTRACTOR SHALL RECORD THE BLUE STAKES ORDER NUMBER AND FURNISH THE ORDER NUMBER TO OWNER AND ENGINEER PRIOR TO ANY EXCAVATION. IT SHALL BE THE CONTRACTOR'S SOLE RESPONSIBILITY TO DIRECTLY CONTACT ANY OTHER UTILITY COMPANIES THAT ARE NOT MEMBERS OF BLUE STAKES. IT SHALL BE THE CONTRACTOR'S SOLE RESPONSIBILITY TO PROTECT ALL EXISTING UTILITIES SO THAT NO DAMAGE RESULTS TO THEM DURING THE PERFORMANCE OF THIS CONTRACT. [ANY REPAIRS NECESSARY TO DAMAGED UTILITIES SHALL BE PAID FOR BY THE CONTRACTOR.] THE CONTRACTOR SHALL COOPERATE WITH OTHER CONTRACTORS AND UTILITY COMPANIES INSTALLING NEW STRUCTURES, UTILITIES AND SERVICE FOR THE PROJECT.

2. CARE SHALL BE TAKEN IN ALL EXCAVATIONS DUE TO POSSIBLE EXISTENCE OF UNRECORDED UTILITY LINES. EXCAVATION REQUIRED PROXIMITY OF EXISTING UTILITY LINES SHALL BE DONE BY HAND. [THE CONTRACTOR SHALL REPAIR ANY DAMAGE TO EXISTING UTILITY LINES OR STRUCTURES INCURRED DURING CONSTRUCTION OPERATIONS AT CONTRACTOR'S EXPENSE.]

3. TRENCH BACKFILL MATERIAL AND COMPACTION TESTS SHALL BE CONDUCTED TAKEN PER APWA STANDARD SPECIFICATIONS (LATEST EDITION), SECTION 02221 - BACKFILLING TRENCHES, OR AS REQUIRED BY THE GEOTECHNICAL REPORT IF NATIVE MATERIALS ARE USED. NO NATIVE MATERIALS ARE ALLOWED IN THE PIPE ZONE. THE MAXIMUM LIFT FOR BACKFILLING EXCAVATIONS IS 8-INCHES.

4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING ANY DAMAGE, CAUSED BY ANY CONDITION INCLUDING SETTLEMENT, TO EXISTING UTILITIES FROM WORK PERFORMED AT OR NEAR EXISTING UTILITIES. THE CONTRACTOR SHALL TAKE ALL MEASURES NECESSARY TO PROTECT ALL EXISTING PUBLIC AND PRIVATE ROADWAY AND UTILITY FACILITIES. DAMAGE TO EXISTING FACILITIES CAUSED BY THE CONTRACTOR SHALL BE REPAIRED BY THE CONTRACTOR AT THEIR EXPENSE TO THE SATISFACTION OF THE OWNER OF SAID FACILITIES.

5. ALL WATER LINE AND SEWER LINE INSTALLATION AND TESTING SHALL COMPLY WITH LOCAL GOVERNING AGENCY'S STANDARDS OR APWA STANDARDS AND SPECIFICATIONS.

6. ALL MANHOLES, HYDRANTS, VALVES, CLEANOUT BOXES, CATCH BASINS, METERS, AND SIMILAR STRUCTURES SHALL BE RAISED OR LOWERED TO FINAL GRADE PER APWA (LATEST EDITION) STANDARDS AND INSPECTOR REQUIREMENTS. CONCRETE COLLARS SHALL BE CONSTRUCTED ON ALL MANHOLES, CLEANOUT BOXES, CATCH BASINS, AND VALVES PER APWA STANDARDS. ALL MANHOLE, CATCH BASIN, OR CLEANOUT BOX CONNECTIONS SHALL BE MADE WITH THE PIPE CUT FLUSH WITH THE INSIDE OF THE BOX AND GROUTED OR SEALED, WITH A CONCRETE COLLAR ON THE EXTERIOR OF THE BOX SURROUNDING PIPE PROVIDING A COMPLETE SEAL.

7. THE CONTRACTOR SHALL NOT ALLOW ANY GROUNDWATER OR DEBRIS TO ENTER THE NEW OR EXISTING PIPES DURING CONSTRUCTION.

8. SILT AND DEBRIS SHALL BE CLEANED OUT OF ALL STORM DRAIN BOXES. CATCH BASINS SHALL BE MAINTAINED IN A CLEAN CONDITION AS NEEDED UNTIL AFTER THE FINAL BOND RELEASE INSPECTION.

9. THE CONTRACTOR SHALL CLEAN ASPHALT, TAR OR OTHER ADHESIVES OFF ALL MANHOLE LIDS AND INLET GRATES TO ALLOW ACCESS.

10. EACH TRENCH SHALL BE EXCAVATED FOR PIPE TO BE LAID TO THE ALIGNMENT AND GRADE AS REQUIRED. THE TRENCH WALL SHALL BE BRACED SO THAT WORKERS MAY WORK SAFELY AND EFFICIENTLY. ALL TRENCHES SHALL BE DRAINED SO THAT PIPE LAYING MAY TAKE PLACE IN DEWATERED CONDITIONS.

11. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN AT ALL TIMES AMPLE MEANS AND DEVICES TO PROMPTLY REMOVE AND PROPERLY DISPOSE OF ALL WATER ENTERING THE TRENCH EXCAVATION.

12. UTAH STATE REGULATIONS ON THE SEPARATION OF DRINKING WATER AND SEWER LINES SHALL BE FOLLOWED. THESE ARE LISTED UNDER UAC R317-3-2.9.B TO UAC R309-550-7.

13. ALL DUCTILE IRON PIPE SHALL BE PRESSURE CLASS OR SPECIAL THICKNESS CLASS CONFORMING TO ANSI/AWWA C150/A21.50 & C151/A21.51 AND AWWA C600 WITH AN 8 MIL. POLYETHYLENE WRAP FOR BURIED INSTALLATIONS.

14. ALL DUCTILE IRON FITTINGS SHALL BE RATED FOR WORKING PRESSURES AS SPECIFIED ON THE DRAWINGS.

15. POLYVINYL CHLORIDE PIPE SHALL CONFORM TO AWWA C900 (12-INCH DIAMETER OR LESS) OR AWWA C905 (DIAMETER LARGER THAN 12-INCHES) WITH A DIMENSION RATIO (DR) OF 18 OR LESS AND SHALL COMFORM TO ASTM D2774 AND AWWA M23.

16. ALL GATE VALVES SHALL BE RESILIENT WEDGE GATE VALVES AND SHALL CONFORM TO AWWA C-509 OR C-515. GATE VALVES INSTALLED IN VAULTS SHALL BE FURNISHED WITH HANDWHEEL OPERATORS. VALVES INSTALLED IN DIRECT BURY APPLICATIONS SHALL BE FURNISHED WITH A TWO-INCH SQUARE OPERATING NUT AND SLIP TYPE, CAST IRON VALVE BOX.

17. ALL BUTTERFLY VALVES FOR STANDARD PRESSURE APPLICATIONS SHALL BE TIGHT-CLOSING RUBBER SEAT BUTTERFLY VALVES AND SHALL MEET THE REQUIREMENTS OF AWWA C-504 FOR CLASS 150 B VALVES AND RATED FOR WORKING PRESSURE OF 150 PSI. HIGH PRESSURE BUTTERFLY VALVES SHALL BE RATED FOR WORKING PRESSURES AS SPECIFIED ON THE DRAWINGS.

18. ALL BOLTS FOR DIRECT BURY FITTINGS SHALL BE COATED WITH FM GREASE, AND THE ENTIRE FITTING SHALL BE WRAPPED WITH AN 8 MIL. POLYETHYLENE PRIOR TO BACKFILLING.

19. THE CONTRACTOR SHALL INSTALL TRACER WIRE AND MAGNETIC LOCATING TAPE CONTINUOUSLY OVER ALL PIPE UNLESS OTHERWISE NOTED ON THE DRAWINGS.

20. ALL DRINKING WATER LINES, TANKS, WELLS, FITTINGS AND APPURTENANCES SHALL BE INSTALLED, TESTED, AND DISINFECTED PER R309-500 THROUGH 550 PUBLIC DRINKING WATER FACILITY DESIGN AND OPERATION RULES. ALL MATERIAL THAT MAY CONTACT DRINKING WATER, INCLUDING PIPES, GASKETS, LUBRICANTS, O-RINGS, SHALL BE CERTIFIED PER ANSI/NSF 61, CERTIFIED DRINKING WATER SYSTEM COMPONENTS - HEALTH EFFECTS. TO PERMIT FIELD VERIFICATION OF THIS COMPLIANCE, ALL SUCH COMPONENTS SHALL BE APPROPRIATELY STAMPED WITH THE NSF LOGO. FLUSHING AND DISINFECTION OF DRINKING WATER LINES, TANKS, WELLS, FITTINGS AND APPURTENANCES SHALL BE IN ACCORDANCE WITH AWWA STANDARD C651. PRESSURE AND LEAK TESTING SHALL COMPLY WITH AWWA C600.

21. ALL BURIED MECHANICAL JOINTS SHALL BE RESTRAINED

22. ALL OPEN ENDS OF PIPE SHALL BE EFFECTIVELY SEALED AT THE END OF THE DAY'S WORK AND PIPE SHALL NOT BE DROPPED INTO THE TRENCH.

23. PVC PIPE SHALL BE PRESSURE TESTED ACCORDING TO AWWA C605.

24. THE WATER LINE TO BE LAID WITHOUT HIGH POINTS OR LOW POINTS, EXCEPT WHERE SHOWN ON THE PLAN AND PROFILE SHEETS.

25. DRINKING WATER LINES TO BE INSTALLED WITH MINIMUM OF 48-INCHES OF COVER.

26. HIGH DENSITY POLYETHLENE PIPE (HDPE) SHALL CONFORM TO AWWA M55 AND ASTM D2774.

27. THE CONTRACTOR SHALL OBSERVE THE REQUIRED SEPARATION BETWEEN WATER AND SEWER PIPELINES PER UAC R317-3-2.

28. ALL ELBOWS, TEES, CROSSES, CAPPED ENDS, VALVES AND OTHER APPURTENANCES SHALL BE FULLY RESTRAINED USING THRUST BLOCKS AND RESTRAINED JOINTS OR OTHER ACCEPTED METHODS UNLESS OTHERWISE NOTED ON THE PROJECT DRAWINGS. THE CONTRACTOR SHALL NOTIFY ENGINEER IF A THRUST BLOCK CANNOT BE POURED FOR A FITTING.

29. THE ENGINEER SHALL PROVIDE AN ELECTRONIC FILE SHOWING PIPELINE ALIGNMENT IN COORDINATES TO USE IN PIPELINE STAKING.

30. THE CONTRACTOR SHALL COORDINATE ALL RESTORATION EFFORTS WITH THE OWNER AND AGENCIES WITH JURISDICTION.

31. THE CONTRACTOR SHALL COORDINATE THE LOCATION OF NEW "DRY UTILITIES" WITH THE APPROPRIATE UTILITY COMPANY, INCLUDING BUT NOT LIMITED TO: TELEPHONE AND INTERNET SERVICE, GAS SERVICE, CABLE, AND POWER.

32. ALL UNDERGROUND UTILITIES SHALL BE IN PLACE PRIOR TO THEINSTALLATION OF CURB, GUTTER, SIDEWALK AND STREET PAVING.

CONCRETE NOTES

1. UNLESS OTHERWISE NOTED, ALL ON-GRADE CONCRETE SHALL BE PLACED ON A MINIMUM 6-INCH GRAVEL BASE OVER A WELL COMPACTED (95% DENSITY PER ASTM D-1557) SUB GRADE.

2. REFER TO THE GENERAL STRUCTURAL NOTES FOR ADDITIONAL CONCRETE NOTES.

TRAFFIC CONTROL AND SAFETY NOTES

1. THE CONTRACTOR SHALL PROVIDE ALL FLAGGING, BARRICADES, AND TRAFFIC CONTROL NECESSARY FOR ENSURE SAFETY TO THE GENERAL PUBLIC DURING CONSTRUCTION. A TRAFFIC CONTROL PLAN SHALL BE DEVELOPED BY THE CONTRACTOR AND SUBMITTED TO THE AGENCIES WITH JURISDICTION.

2. TRAFFIC CONTROL, BARRICADES, DETOURING, AND STRIPING SHALL CONFORM TO THE CURRENT MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (M.U.T.C.D.).

3. NO STREET SHALL BE CLOSED TO TRAFFIC WITHOUT WRITTEN PERMISSION FROM THE APPROPRIATE AGENCY, EXCEPT WHEN DIRECTED BY LAW ENFORCEMENT OR FIRE OFFICIALS.

4. THE CONTRACTOR SHALL MAKE EVERY EFFORT TO PROVIDE SMOOTH TRAFFIC FLOW AND SAFETY. ACCESS SHALL BE MAINTAINED FOR ALL PROPERTIES ADJACENT TO THE WORK.

5. DETOURING OPERATIONS FOR A PERIOD OF SIX CONSECUTIVE CALENDAR DAYS, OR MORE, SHALL REQUIRE THE INSTALLATION OF TEMPORARY STREET STRIPING AND REMOVAL OF INTERFERING STRIPING BY SANDBLASTING. THE DETOURING STRIPING PLAN OR CONSTRUCTION TRAFFIC CONTROL PLAN SHALL BE SUBMITTED TO THE CITY TRAFFIC ENGINEER OR LOCAL JURISDICTION FOR REVIEW AND APPROVAL.

6. ALL TRAFFIC CONTROL DEVICES (TCDS) SHALL BE RESTORED TO THEIR ORIGINAL CONDITION AT THE END OF THE WORK TO THE SATISFACTION OF THE CITY TRAFFIC ENGINEER OR LOCAL JURISDICTION OF AUTHORITY.

7. TCDS SHALL REMAIN VISIBLE AND OPERATIONAL AT ALL TIMES.

8. ALL PERMANENT TRAFFIC CONTROL DEVICES (TCDS) CALLED FOR HEREIN SHALL BE IN PLACE AND IN THEIR FINAL POSITION PRIOR TO ALLOWING ANY PUBLIC TRAFFIC ONTO THE PORTIONS OF THE ROAD(S) BEING IMPROVED HEREUNDER, REGARDLESS OF THE STATUS OF COMPLETION OF PAVING OR OTHER OFF-SITE IMPROVEMENTS CALLED FOR BY THESE PLANS.

9. THE CONTRACTOR SHALL PROVIDE BARRICADES, SIGNS, FLASHERS, OTHER EQUIPMENT AND FLAG PERSONS NECESSARY TO ENSURE THE SAFETY OF WORKERS AND VISITORS.

GRADING AND DRAINAGE NOTES

1. SITE GRADING SHALL BE PERFORMED IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS AND THE RECOMMENDATIONS SET FORTH IN THE GEOTECHNICAL REPORT AND ALL RELATED ADDENDUMS.

2. THE CONTRACTOR SHALL STRIP AND CLEAR THE TOPSOIL, MAJOR ROOTS AND ORGANIC MATERIAL FROM ALL PROPOSED BUILDING, PIPELINES, AND PAVEMENT AREAS PRIOR TO SITE GRADING. (TOPSOIL MAY BE STOCKPILED FOR LATER USE IN LANDSCAPED AREAS.)

3. THE CONTRACTOR SHALL REMOVE ALL ORGANIC MATERIAL AND OTHER DELETERIOUS MATERIALS PRIOR TO PLACING GRADING FILL OR BASE COURSE. THE AREA SHALL BE PROOF-ROLLED TO IDENTIFY ANY SOFT AREAS. WHERE SOFT AREAS ARE ENCOUNTERED, THE CONTRACTOR SHALL REMOVE IT AND REPLACE WITH COMPACTED FILL.

4. ALL DEBRIS PILES AND BERMS SHALL BE REMOVED AND HAULED AWAY FROM THE SITE OR USED AS GENERAL FILL IN LANDSCAPED AREAS.

5. THE CONTRACTOR SHALL CONSTRUCT THE BUILDING PAD ACCORDING TO THESE DESIGN PLANS AS PART OF THE SITE GRADING CONTRACT.

6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGE AND DEBRIS ON ADJACENT STREETS WHEN EQUIPMENT IS TRAVELING ON THOSE STREETS.

7. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PERFORM ALL NECESSARY CUTS AND FILLS WITHIN THE LIMITS OF THIS PROJECT AND THE RELATED OFF-SITE WORK TO GENERATE THE DESIRED SUBGRADE, FINISH GRADES, AND SLOPES SHOWN.

8. THE CONTRACTOR IS WARNED THAT AN EARTHWORK BALANCE WAS NOT NECESSARILY THE INTENT OF THIS PROJECT. ANY ADDITIONAL MATERIAL REQUIRED OR LEFTOVER MATERIAL FOLLOWING EARTHWORK OPERATIONS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND CAN BE UTILIZED ONSITE AT LOCATIONS COORDINATED WITH OWNER.

9. ALL CUT AND FILL SLOPES SHALL BE PROTECTED UNTIL EFFECTIVE EROSION CONTROL HAS BEEN ESTABLISHED.

10. THE USE OF POTABLE WATER WITHOUT A SPECIAL PERMIT FOR BUILDING OR CONSTRUCTION PURPOSES INCLUDING CONSOLIDATION OF BACKFILL OR DUST CONTROL IS PROHIBITED. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS FOR CONSTRUCTION WATER FROM THE GOVERNING AGENCY.

11. THE CONTRACTOR SHALL MAINTAIN THE STREETS, SIDEWALKS, AND ALL OTHER PUBLIC RIGHTS-OF-WAY IN A CLEAN, SAFE AND USABLE CONDITION. ALL SPILLS OF SOIL, ROCK OR CONSTRUCTION DEBRIS SHALL BE PROMPTLY REMOVED AND DISPOSED OF IN A LAWFUL MANNER FROM THE PUBLICLY-OWNED PROPERTY DURING CONSTRUCTION AND UPON COMPLETION OF THE PROJECT. ALL ADJACENT PROPERTY, PRIVATE OR PUBLIC, SHALL BE MAINTAINED IN A CLEAN, SAFE, AND USABLE CONDITION.

12. TOPSOIL SHALL BE REPLACED AND GRADED PRIOR TO REVEGETATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE DEPTH OF EXISTING TOPSOIL AND REPLACING IT TO THE EXISTING TOPSOIL DEPTH. DISTURBED AREAS SHALL BE RESEEDED USING A SEED MIX SPECIFIED ON THE EROSION CONTROL PLAN AND DETAILS.

13. IMPROVEMENT ELEVATION LABELS AND ELEVATION CONTOURS REFERENCE FINISHED ELEVATIONS. REFER TO THE HABBREVIATIONS AND SYMBOL LEGEND INCLUDED HEREIN.

EROSION CONTROL NOTES

1. PER UDEQ, STORM WATER GENERAL PERMIT FOR CONSTRUCTION ACTIVITIES GENERAL PERMIT NO. UTR 300000, CONSTRUCTION ACTIVITY INCLUDING CLEARING, GRADING, EXCAVATION, AND DEMOLITION THAT DISTURBS ONE OR MORE ACRES OF LAND SHALL REQUIRE INCLUSION IN THE GENERAL PERMIT AND SHALL COMPLY WITH THE REQUIREMENTS THEREIN.

2. THE TOTAL PROJECT AREA OF DISTURBANCE IS GREATER THAN ONE ACRE; THEREFORE, AN UPDES STORM WATER PERMIT IS REQUIRED.

3. THE CONTRACTOR SHALL OBTAIN A STORM WATER PERMIT FOR THIS PROJECT, IF APPLICABLE, AND MAINTAIN A STORM WATER POLLUTION PREVENTION PLAN (SWPPP) ON SITE DURING ALL PHASES OF CONSTRUCTION.

4. THE PRIME CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR COMPLIANCE WITH THE GENERAL PERMIT.

5. THE EROSION CONTROL PLAN HEREIN IS FOR PERMITTING PURPOSES ONLY. THE CONTRACTOR SHALL REVISE THE EROSION CONTROL PLAN TO FIT SPECIFIC SITE CONDITIONS AS REQUIRED TO MEET THE REQUIREMENTS AND CONDITIONS OF THE PERMIT.

6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLIANCE WITH THE PERMIT THROUGHOUT CONSTRUCTION AND UNTIL THE NOTICE OF TERMINATION (NOT) IS ISSUED BY UDEQ. THE CONTRACTOR SHALL BE FAMILIAR WITH ALL PERMIT REQUIREMENTS.

7. THE CONTRACTOR SHALL MAINTAIN DUST CONTROL WITH WATER AND/OR DUST PALLIATIVE AT ALL TIMES. THE CONTRACTOR SHALL PROVIDE SUFFICIENT LABOR, EQUIPMENT, AND MATERIALS ONSITE TO MAINTAIN DUST CONTROL WHEN CONDITIONS REQUIRE.

SPECIAL INSPECTION AS PER IBC

1. REFER TO THE STRUCTURAL SPECIAL INSPECTION SHEET FOR SPECIAL INSPECTIONS REQUIRED BY THE INTERNATIONAL BUILDING CODE.

DESIGN CRITERIA

1. REFER TO THE GENERAL STRUCTURAL NOTES SHEET FOR PROJECT DESIGN CRITERIA.

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COBABE RANCH AND EDEN CROSSING WELL HOUSE AND BOOSTER STATION

(PWS. NO. 29132)
EDEN, UTAH

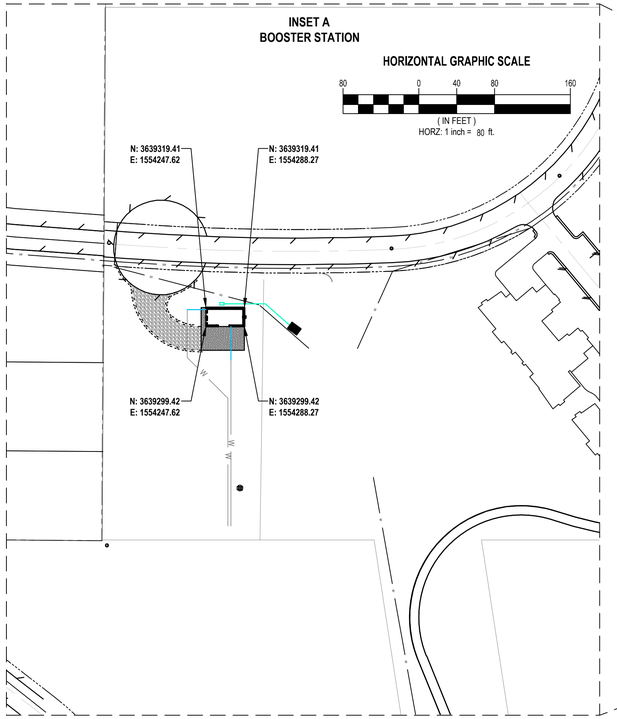
PROFESSIONAL ENGINEER
7-22-25
7014610-2202
RYAN W. BRADLEY
EXP: 3-31-2027
STATE OF UTAH

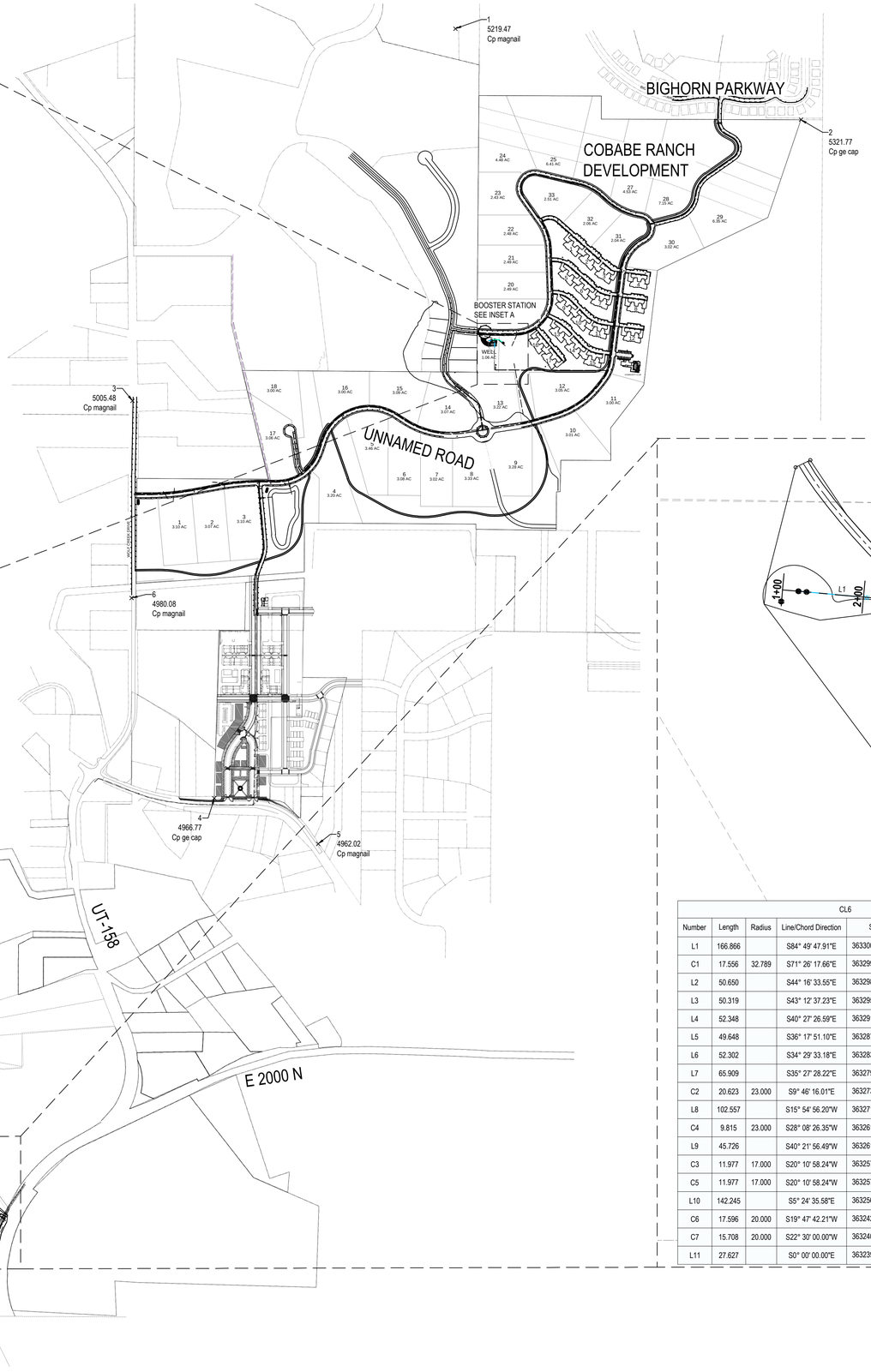
PERMIT SET 7/22/2025

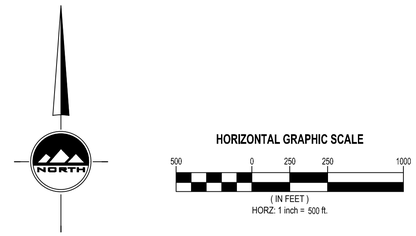
GENERAL NOTES

PROJECT NUMBER	PRINT DATE
14018B	2025-07-22
PROJECT MANAGER	DESIGNED BY
R. BRADLEY	G. GAVIN

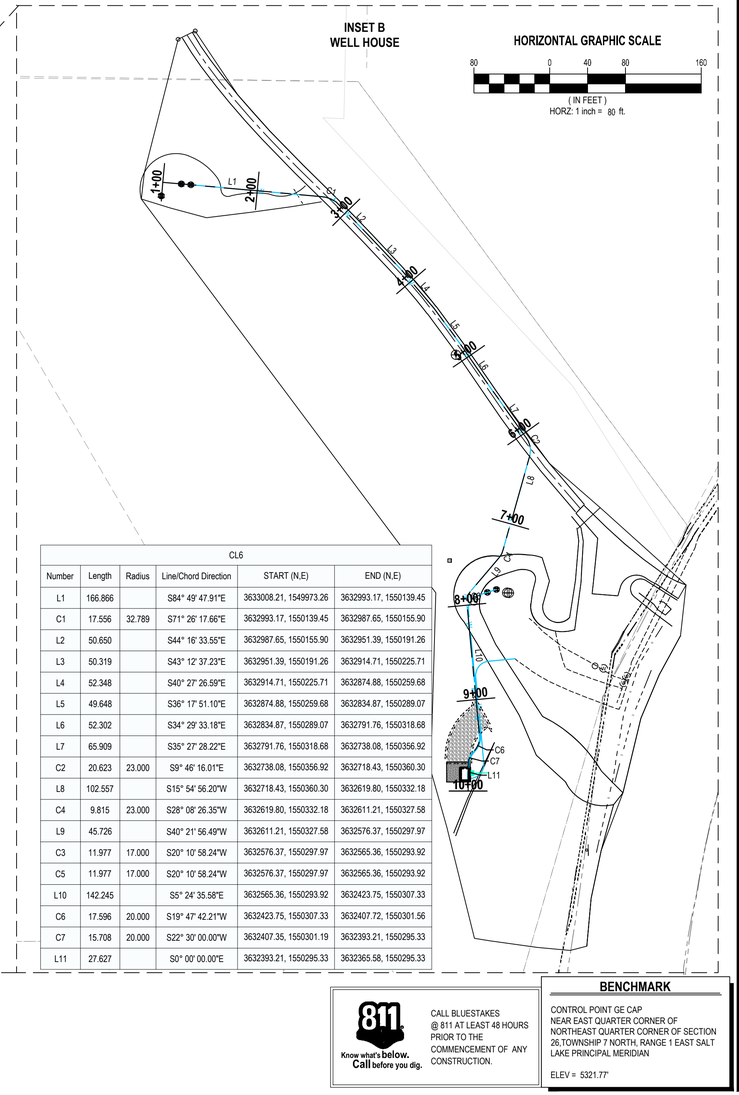
C-002







POINT TABLE				
POINT #	DESCRIPTION	ELEVATION	NORTHING	EASTING
1	Cp magnail	5219.47	3641718.47	1553973.78
2	Cp ge cap	5321.77	3641016.94	1556633.55
3	Cp magnail	5005.48	3638852.91	1551487.45
4	Cp ge cap	4966.77	3635792.78	1552117.33
5	Cp magnail	4962.02	3635441.31	1552916.39
6	Cp magnail	4980.08	3637334.77	1551481.04



CL6					
Number	Length	Radius	Line/Chord Direction	START (N,E)	END (N,E)
L1	166.866		S84° 49' 47.91"E	3633008.21, 1549973.26	3632993.17, 1550139.45
C1	17.556	32.789	S71° 26' 17.66"E	3632993.17, 1550139.45	3632987.65, 1550155.90
L2	50.650		S44° 16' 33.55"E	3632987.65, 1550155.90	3632951.39, 1550191.26
L3	50.319		S43° 12' 37.23"E	3632951.39, 1550191.26	3632914.71, 1550225.71
L4	52.348		S40° 27' 26.59"E	3632914.71, 1550225.71	3632874.88, 1550259.68
L5	49.648		S36° 17' 51.10"E	3632874.88, 1550259.68	3632834.87, 1550289.07
L6	52.302		S34° 29' 33.18"E	3632834.87, 1550289.07	3632791.76, 1550318.68
L7	65.909		S35° 27' 28.22"E	3632791.76, 1550318.68	3632738.08, 1550356.92
C2	20.623	23.000	S9° 46' 16.01"E	3632738.08, 1550356.92	3632718.43, 1550360.30
L8	102.557		S15° 54' 56.20"W	3632718.43, 1550360.30	3632619.80, 1550332.18
C4	9.815	23.000	S28° 08' 26.35"W	3632619.80, 1550332.18	3632611.21, 1550327.58
L9	45.726		S40° 21' 56.49"W	3632611.21, 1550327.58	3632576.37, 1550297.97
C3	11.977	17.000	S20° 10' 58.24"W	3632576.37, 1550297.97	3632565.36, 1550293.92
C5	11.977	17.000	S20° 10' 58.24"W	3632576.37, 1550297.97	3632565.36, 1550293.92
L10	142.245		S5° 24' 35.58"E	3632565.36, 1550293.92	3632423.75, 1550307.33
C6	17.596	20.000	S19° 47' 42.21"W	3632423.75, 1550307.33	3632407.72, 1550301.56
C7	15.708	20.000	S22° 30' 00.00"W	3632407.35, 1550301.19	3632393.21, 1550295.33
L11	27.627		S0° 00' 00.00"E	3632393.21, 1550295.33	3632365.58, 1550295.33

811 Know what's below. Call before you dig.

CALL BLUESTAKES @ 811 AT LEAST 48 HOURS PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION.

BENCHMARK

CONTROL POINT GE CAP
NEAR EAST QUARTER CORNER OF NORTHEAST QUARTER CORNER OF SECTION 26,TOWNSHIP 7 NORTH, RANGE 1 EAST SALT LAKE PRINCIPAL MERIDIAN

ELEV = 5321.77'

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COBABE RANCH AND EDEN CROSSING WELL HOUSE AND BOOSTER STATION

(PWS. NO. 29132)
EDEN, UTAH

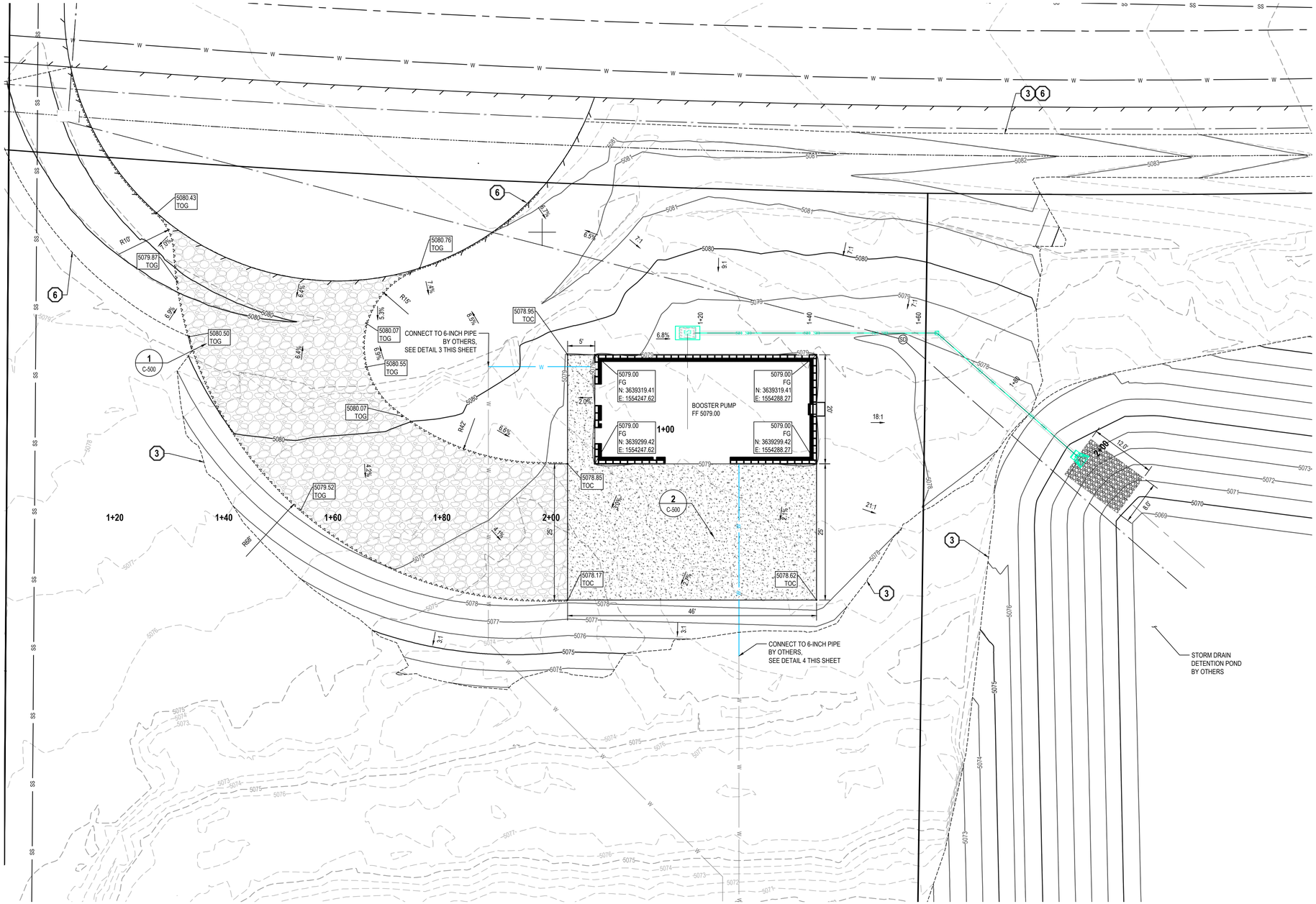
PROFESSIONAL ENGINEER
7-22-25
7211410-2202
RYAN W.
BRADLEY
EXP. 3-31-2027
STATE OF UTAH

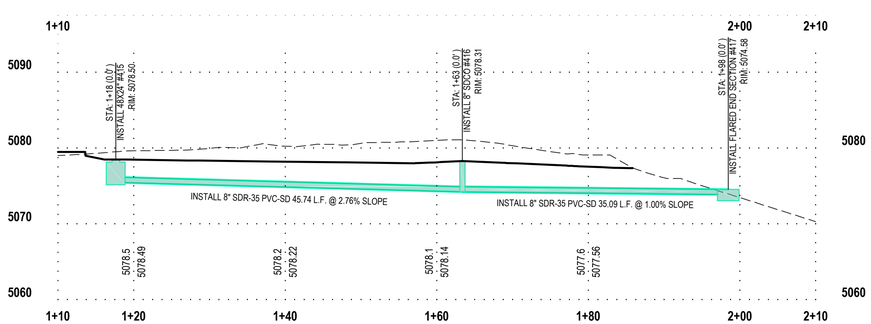
PERMIT SET 7/22/2025

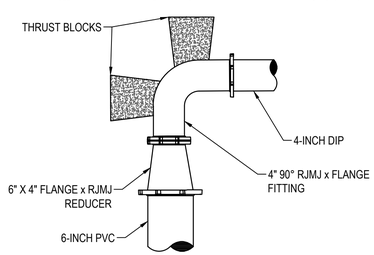
HORIZONTAL CONTROL PLAN

PROJECT NUMBER 14018B
PRINT DATE 2025-07-22
PROJECT MANAGER R. BRADLEY
DESIGNED BY G. GAVIN

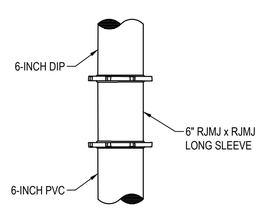
C-100







3 90° 6-INCH TO 4-INCH CONNECTION
SCALE: NONE



4 6-INCH TO 6-INCH SLEEVE CONNECTION
SCALE: NONE

GENERAL NOTES

1. ALL WORK TO COMPLY WITH THE GOVERNING AGENCY'S STANDARDS AND SPECIFICATIONS.
2. EXISTING UNDERGROUND UTILITIES AND IMPROVEMENTS ARE SHOWN IN THEIR APPROXIMATE LOCATIONS BASED UPON RECORD INFORMATION AVAILABLE AT THE TIME OF PREPARATION OF THESE PLANS. LOCATIONS MAY NOT HAVE BEEN VERIFIED IN THE FIELD AND NO GUARANTEE IS MADE AS TO THE ACCURACY OR COMPLETENESS OF THE INFORMATION SHOWN. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE THE EXISTENCE AND LOCATION OF THE UTILITIES SHOWN ON THESE PLANS OR INDICATED IN THE FIELD BY LOCATING SERVICES. ANY ADDITIONAL COSTS INCURRED AS A RESULT OF THE CONTRACTOR'S FAILURE TO VERIFY THE LOCATIONS OF EXISTING UTILITIES PRIOR TO THE BEGINNING OF CONSTRUCTION IN THEIR VICINITY SHALL BE BORNE BY THE CONTRACTOR AND ASSUMED INCLUDED IN THE CONTRACT. THE CONTRACTOR IS TO VERIFY ALL CONNECTION POINTS WITH THE EXISTING UTILITIES. THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE CAUSED TO THE EXISTING UTILITIES AND UTILITY STRUCTURES THAT ARE TO REMAIN. IF CONFLICTS WITH EXISTING UTILITIES OCCUR, THE CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO CONSTRUCTION TO DETERMINE IF ANY FIELD ADJUSTMENTS SHOULD BE MADE.
3. ALL WATER INFRASTRUCTURE TO BE INSTALLED PER GOVERNING AGENCY OR APWA STANDARD PLANS AND SPECIFICATIONS
4. WHERE HDPE PIPE IS USED, CONNECTIONS SHALL BE FLANGED OR FUSED AS NOTED ON THE DRAWINGS AND DETAILS. FLANGED HDPE FITTING CONNECTIONS SHALL BE COMPLETED WITH A FLANGE ADAPTER FUSED TO PIPE AND IPS BACK UP RING. HDPE PIPE SHALL BE LAID IN TRENCH AND ALLOWED TIME PER MANUFACTURER'S RECOMMENDATIONS TO EXPAND/CONTRACT TO TRENCH AMBIENT TEMPERATURE BEFORE FINAL CONNECTIONS ARE MADE.
5. DEFLECT OR LOOP ALL WATERLINES TO AVOID CONFLICTS WITH OTHER UTILITIES PER GOVERNING AGENCY'S STANDARDS AND SPECIFICATIONS.
6. PROJECT SHALL COMPLY WITH ALL UTAH DIVISION OF DRINKING WATER RULES AND REGULATIONS INCLUDING, BUT NOT LIMITED TO, THOSE PERTAINING TO BACK FLOW PROTECTION AND CROSS CONNECTION PREVENTION.
7. ALL SURFACE IMPROVEMENTS DISTURBED BY CONSTRUCTION SHALL BE RESTORED OR REPLACED, INCLUDING TREES AND DECORATIVE SHRUBS, SOD, FENCES, WALLS AND STRUCTURES, WHETHER OR NOT THEY ARE SPECIFICALLY SHOWN ON THE CONTRACT DOCUMENTS.
8. THE CONTRACTOR IS TO COORDINATE ALL UTILITIES WITH MECHANICAL/PLUMBING PLANS.
9. THE CONTRACTOR SHALL ADJUST TO GRADE ALL EXISTING UTILITIES AS NEEDED PER LOCAL GOVERNING AGENCY'S STANDARDS AND SPECIFICATIONS.
10. NOTIFY ENGINEER OF ANY DISCREPANCIES IN DESIGN OR STAKING BEFORE PLACING CONCRETE OR ASPHALT.
11. THE CONTRACTOR IS TO PROTECT AND PRESERVE ALL EXISTING IMPROVEMENTS, UTILITIES, AND SIGNS, ETC. UNLESS OTHERWISE NOTED ON THESE PLANS.

SCOPE OF WORK:

PROVIDE, INSTALL AND/OR CONSTRUCT THE FOLLOWING PER THE SPECIFICATIONS GIVEN OR REFERENCED, THE DETAILS NOTED, AND/OR AS SHOWN ON THE CONSTRUCTION DRAWINGS:

1. COORDINATE WITH GARDNER, EDEN CITY, CONTRACTORS ON OTHER IMPROVEMENTS, AND ENGINEER ON CONSTRUCTION PHASING.
2. UTILITY TRENCH PER DETAIL 3/C-500. 4" HDPE POTABLE WATER LINE PER GOVERNING AGENCY'S STANDARDS AND SPECIFICATIONS. MAXIMUM BEND RADIUS PER MANUFACTURER'S SPECIFICATIONS.
3. DAYLIGHT TO EXISTING GROUND WITH MAXIMUM 4:1 SLOPE, UNLESS NOTED OTHERWISE. REFER TO GEOTECHNICAL REPORT FOR SLOPE STABILITY.
4. ELECTRICAL CONDUITS AND WIRE (SEE ELECTRICAL DRAWINGS)
5. SEE MECHANICAL SHEETS FOR CATCH BASIN PLANS
6. SEE GARDNER ROADWAY PLANS FOR DITCH GRADING

Know what's below. Call before you dig.

CALL BLUESTAKES @ 811 AT LEAST 48 HOURS PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION.

BENCHMARK

CONTROL POINT GE CAP
NEAR EAST QUARTER CORNER OF NORTHEAST QUARTER CORNER OF SECTION 26,TOWNSHIP 7 NORTH, RANGE 1 EAST SALT LAKE PRINCIPAL MERIDIAN

ELEV = 5321.77'

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FOR:
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EDEN, UT 84310

CONTACT:
JOHN LEWIS
PHONE: 801.897.4880

COBABE RANCH AND EDEN CROSSING WELL HOUSE AND BOOSTER STATION (PWS. NO. 29132) EDEN, UTAH

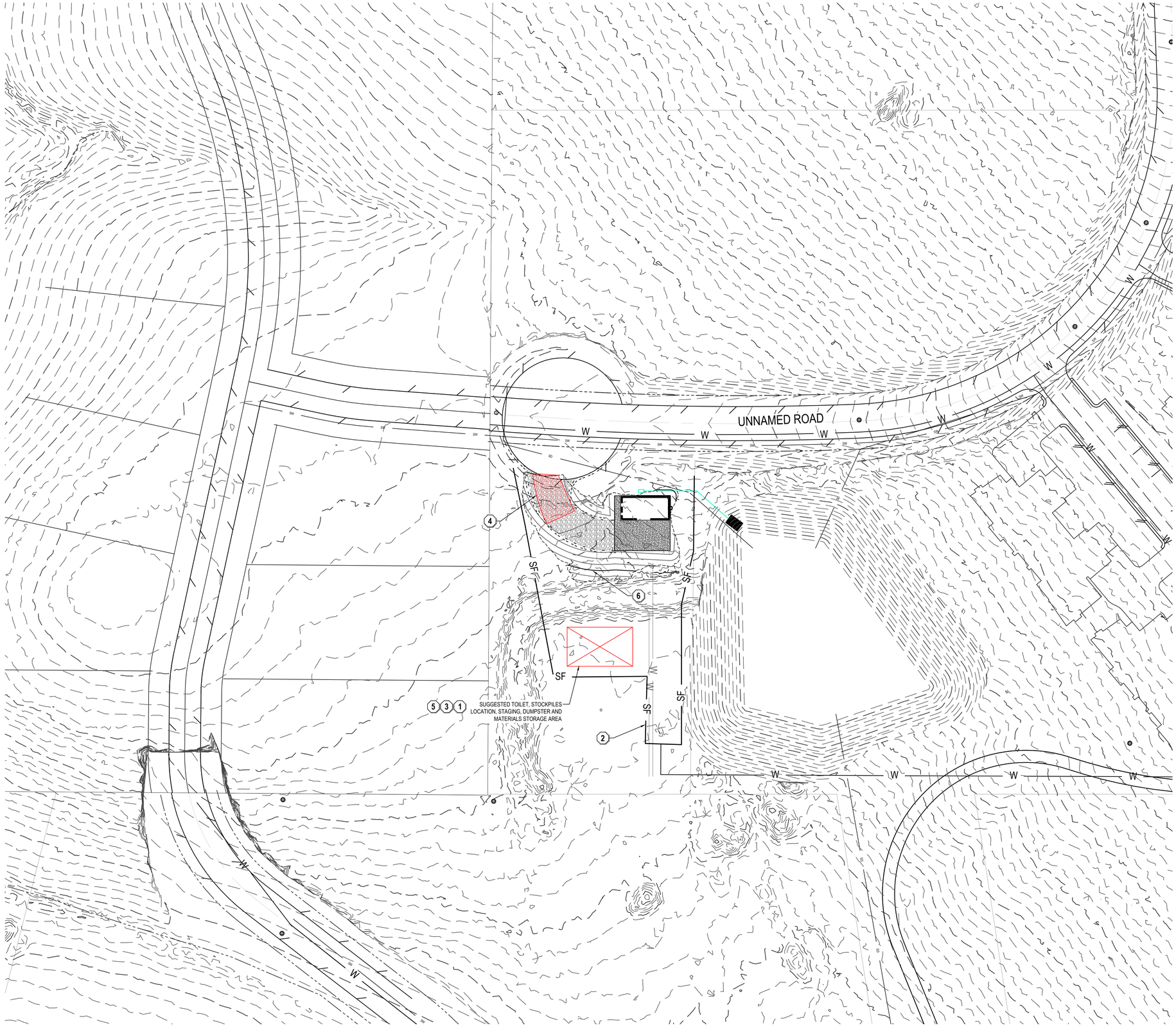
PROFESSIONAL ENGINEER
7-22-25
7016410-2202
RYAN W. BRADLEY
EXP: 3-31-2027
STATE OF UTAH

PERMIT SET 7/22/2025

BOOSTER STATION SITE, UTILITY, AND GRADING PLAN

PROJECT NUMBER	PRINT DATE
14018B	2025-07-22
PROJECT MANAGER	DESIGNED BY
R. BRADLEY	G. GAVIN

C-201



NORTH

HORIZONTAL GRAPHIC SCALE

40 0 20 40 80

(IN FEET)

HORZ: 1 inch = 40 ft.

GENERAL NOTES

1. THIS PLAN IS DESIGNED AS A FIRST APPRAISAL OF NECESSARY MEANS TO PROTECT THE WATERS OF THE STATE FROM POTENTIAL POLLUTION. IT IS THE RESPONSIBILITY OF THE OWNER/OPERATOR TO ADD WARRANTED BEST MANAGEMENT PRACTICES (BMP'S) AS NECESSARY, MODIFY THOSE SHOWN AS APPROPRIATE, AND DELETE FROM THE PROJECT THOSE FOUND TO BE UNNECESSARY. FEDERAL AND STATE LAW ALLOWS THESE UPDATES TO BE MADE BY THE OWNER/OPERATOR ONSITE AND RECORDED BY THE OWNER/OPERATOR ON THE COPY OF THE SWPPP KEPT ONSITE.
2. DISTURBED LAND SHALL BE KEPT TO A MINIMUM. STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS PRACTICABLE IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED, BUT IN NO CASE MORE THAN 14 DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED. HOWEVER, WHERE CONSTRUCTION ACTIVITY ON A PORTION OF THE SITE IS TEMPORARILY CEASED, AND EARTH DISTURBING ACTIVITIES WILL BE RESUMED WITHIN 21 DAYS, TEMPORARY STABILIZATION MEASURES DO NOT HAVE TO BE INITIATED ON THAT PORTION OF THE SITE.
3. RESEED DISTURBED LAND WITH NATIVE GRASS MIXTURE WITHIN 14 CALENDAR DAYS OF ACHIEVEMENT OF FINISH GRADE TO STABILIZE SOILS IF LAND IS NOT TO BE RE-WORKED WITHIN 14 CALENDAR DAYS OF THE CESSATION OF CONSTRUCTION ACTIVITIES AT THAT LOCATION.
4. DETAILS SHOWN ARE TO BE EMPLOYED TO PROTECT RUNOFF AS APPROPRIATE DURING CONSTRUCTION. NOT ALL DETAILS ARE NECESSARY AT ALL PHASES OF THE PROJECT. IT SHALL BE THE RESPONSIBILITY OF THE OWNER/OPERATOR TO USE APPROPRIATE BEST MANAGEMENT PRACTICES AT THE APPROPRIATE PHASE OF CONSTRUCTION. SEE SWPPP FOR BMP IMPLEMENTATION SCHEDULE.
5. VARIOUS BEST MANAGEMENT PRACTICES HAVE BEEN SHOWN ON THE PLANS AT SUGGESTED LOCATIONS. THE CONTRACTOR MAY MOVE AND RECONFIGURE THESE BMP'S TO OTHER LOCATIONS IF PREFERRED, PROVIDED THE INTENT OF THE DESIGN IS PRESERVED.
6. NOT ALL POSSIBLE BMP'S HAVE BEEN SHOWN. THE CONTRACTOR IS RESPONSIBLE TO APPLY CORRECT MEASURES TO PREVENT THE POLLUTION OF STORM WATER PER PROJECT SWPPP.
7. A UPDES (UTAH POLLUTANT DISCHARGE ELIMINATION SYSTEM) PERMIT IS REQUIRED FOR ALL CONSTRUCTION ACTIVITIES 1 ACRE OR MORE.

SCOPE OF WORK:

PROVIDE, INSTALL AND/OR CONSTRUCT THE FOLLOWING PER THE SPECIFICATIONS GIVEN OR REFERENCED, THE DETAILS NOTED, AND/OR AS SHOWN ON THE CONSTRUCTION DRAWINGS:

1. CONCRETE WASHOUT PER DETAIL 1/C-402.
2. SILT FENCE PER DETAIL 5/C-402.
3. PORTABLE TOILET PER DETAIL 4/C-402.
4. VEHICLE STABILIZED CONSTRUCTION ENTRANCE PER DETAIL 2/C-402.
5. SUGGESTED TEMPORARY CONSTRUCTION SITE PARKING, STAGING, DUMPSTER, AND MATERIAL STORAGE AREA.
6. RESEED DISTURBANCE, NON-PAVED, AREAS PER DETAIL 6/C-402

811 Know what's below. Call before you dig.

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BENCHMARK

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ELEV = 5321.77'

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COBABE RANCH AND EDEN CROSSING WELL HOUSE AND BOOSTER STATION

(PWS. NO. 29132)
EDEN, UTAH

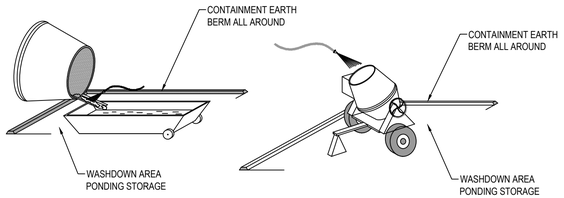
PROFESSIONAL ENGINEER
7-22-25
7215410-2202
RYAN W.
BRADLEY
EXP. 3-31-2027
STATE OF UTAH

PERMIT SET 7/22/2025

BOOSTER STATION EROSION CONTROL PLAN

PROJECT NUMBER 14018B
PRINT DATE 2025-07-22
PROJECT MANAGER R. BRADLEY
DESIGNED BY G. GAVIN

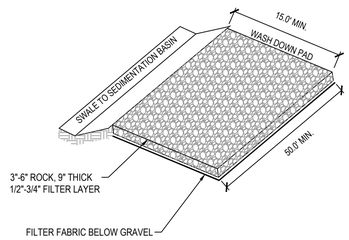
C-401



OPTION A **OPTION B**

1 CONCRETE WASTE MANAGEMENT

SCALE: NONE

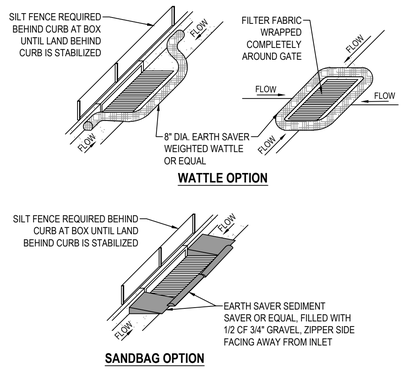


NOTE:

1. PLACE SIGN ADJACENT TO ENTRANCE " CONSTRUCTION TRAFFIC ONLY - ALL CONSTRUCTION TRAFFIC SHALL ENTER AND EXIT SITE AT THIS LOCATION"

2 STABILIZED CONSTRUCTION ENTRANCE

SCALE: NONE

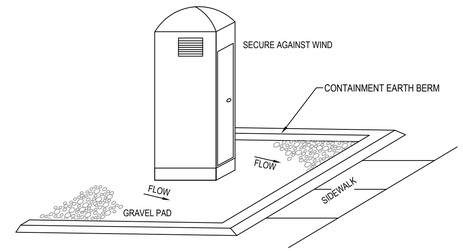


NOTES:

1. PLACE WATTLES OR GRAVEL BAGS TIGHT AGAINST CURB TO PREVENT SEDIMENT-LADEN WATER FROM GETTING BETWEEN CURB AND WATTLE/BAG.
2. PLACE WATTLES OR GRAVEL BAGS SUCH THAT FLOW DOES NOT OVERTOP CURB OR ROAD CENTERLINE.
3. INSPECT INLET PROTECTION AFTER EVERY LARGE STORM EVENT AND AT LEAST BI-WEEKLY, OR PER SWPPP REQUIREMENTS, WHICHEVER IS MORE STRINGENT, TO ENSURE THAT SEDIMENT CONTROL IS MEETING ITS DESIGN INTENT, MAINTAIN AND/OR REPLACE AS NEEDED.
4. REMOVE SEDIMENT ACCUMULATED WHEN IT REACHES 50% OF GRAVEL BAG OR WATTLE HEIGHT.
5. CONTRACTOR MAY SUBMIT AN ALTERNATIVE METHOD OF INLET PROTECTION. THE ALTERNATIVE METHOD SHALL BE APPROVED BY THE CITY INSPECTOR AND THE ENGINEER OF RECORD.
6. BEFORE PLACEMENT OF CURB, STABILIZATION OF LAND BEHIND CURB, AND/OR PAVING, MAINTAIN TOP OF INLET AT 6" ABOVE GRADE, AND SURROUND WITH SILT FENCE FOR SEDIMENTATION AROUND BOX. MAINTAIN SILT FENCE BEHIND BOX UNTIL LAND BEHIND CURB IS STABILIZED.

3 SAG INLET PROTECTION

SCALE: NONE



4 PORTABLE TOILET

SCALE: NONE

NOTES:

1. EXCAVATE 6"x6" TRENCH ALONG LIMITS OF DISTURBANCE AS SHOWN ON CONSTRUCTION DRAWINGS.
2. POSTS SHALL BE POSITIONED ON DOWNSTREAM SIDE OF FENCE.
3. LAY TOE-IN FABRIC FLAP IN BOTTOM OF TRENCH. BACKFILL TRENCH WITH FREE DRAINING GRANULAR MATERIAL. COMPACT TRENCH TO SATISFACTION OF THE ENGINEER OF RECORD.
4. SILT FENCE GEOTEXTILE SHALL MEET AASHTO M288-92 REQUIREMENTS.
5. REMOVE & DISPOSE OF SEDIMENT WHEN ACCUMULATION IS 50% OF EXPOSED FENCE HEIGHT.
6. 10' MAX. SPACING BETWEEN STAKES.
7. SILT FENCES SHALL BE INSTALLED ALONG CONTOURS, NOT UP AND DOWN SLOPES, WITH 10' OVERLAP AT BREAKS.

5 TEMPORARY SILT FENCE

SCALE: NONE

SEED MIX SPECIFICATION (RECOMMENDED):

SEED MIX : 25 LB./ACRE MIX OF CABIN BLEND, PER SUPPLIER'S RECOMMENDATIONS. (AVAILABLE FROM *GRANITE SEED*, LEHI, UTAH)

SPECIES	PLS (LBS./ACRE)	% BY WEIGHT	% BY SEEDS
MOUNTAIN BROME (BROMUS MARGINATUS)	7.5	30	9.0
SLENDER WHEATGRASS (ELYMUS TRACHYCAULUS SSP. TRACHYCAULUS)	6.25	25	18.6
SANDBERG BLUEGRASS (POA SECUNDA SSP. SANDBERGII)	1.25	5	24.5
IDAHO FESCUE (FESTUCA IDAHOENSIS)	1.25	5	10.5
WESTERN WHEATGRASS (PASCOPYRUM SMITHII)	5	20	10.3
BIG BLUEGRASS (POA SECUNDA SSP. AMPLA)	1.25	5	20.6
BLUEBUNCH WHEATGRASS (PSEUDOROEGNERIA SPIC ATA SSP. SPICATA)	2.5	10	6.5
TOTAL	25	100	100.0

BROADCAST METHOD

A. SEEDING OF NON-IRRIGATED AREAS IS REQUIRED ON OR AFTER OCTOBER 15, BUT BEFORE SNOW ACCUMULATES.
B. USE THE BROADCAST METHOD OF SEEDING UNDER THE FOLLOWING CONDITIONS:
   1. SLOPES STEEPER THAN 3:1, THAT REQUIRE GEOTEXTILE.
   2. SLOPES 3:1 AND FLATTER WHERE THE AREA TO BE SEEDED IS INACCESSIBLE TO DRILL.
   3. WHERE THE AREA TO BE SEEDED IS NOT LARGE ENOUGH TO JUSTIFY USING A DRILL.
   4. WHERE ROCKY SURFACE CONDITIONS WOULD DAMAGE A DRILL.
B. OBTAIN APPROVAL OF THE BROADCAST METHOD BY DEMONSTRATING THE PROCEDURE ON A 100 YD^2 AREA.
C. EVENLY BROADCAST SEED USING EITHER:
   1. A CYCLONE SEEDER OR OTHER APPROVED MECHANICAL SEEDER.
   2. A HYDROSEEDER
      a) APPLY SEED, WATER AND 300 LB OF CELLULOSE FIBER MULCH (TRACER) PER ACRE.
D. DO NOT SEED DURING WINDY WEATHER OR WHEN SOIL IS SATURATED.
E. INCORPORATE THE SEED INTO THE SOIL BY ONE OF THREE METHODS:
   1. CAT-TRACKING, RUNNING THE DOZER UP AND DOWN THE SLOPE, CREATING CONTINUOUS CLEAT TRACKS THAT RUN PARALLEL WITH THE CONTOURS.
   2. HAND RAKING THE SEED IN 1/2 INCH DEEP AND ALONG THE CONTOURS OF THE SLOPE. SLOPE CHAINING BY PULLING THE CHAIN ALONG THE CONTOUR UNTIL THE SEED IS COVERED
F. OBTAIN APPROVAL FROM THE ENGINEER THAT THE SEED HAS BEEN ADEQUATELY INCORPORATED INTO THE SOIL BEFORE APPLYING MULCH, BLANKET, OR OTHER TOPDRESSING.

6 SEED MIX SPECIFICATION

SCALE: NONE

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COBABE RANCH AND EDEN CROSSING WELL HOUSE AND BOOSTER STATION

(PWS. NO. 29132)
EDEN, UTAH

PROFESSIONAL ENGINEER
7-22-25
7091410-2202
RYAN BRADLEY
EXP. 3-31-2027
STATE OF UTAH

PERMIT SET 7/22/2025

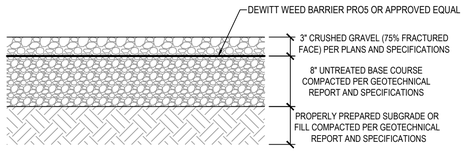
EROSION CONTROL DETAILS

PROJECT NUMBER 14018B
PRINT DATE 2025-07-22
PROJECT MANAGER R. BRADLEY
DESIGNED BY G. GAVIN

C-402

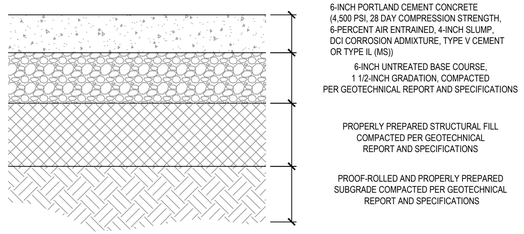
CONCRETE NOTES

1. ALL PAVING TO BE PLACED IN ACCORDANCE WITH THE AMERICAN CONCRETE INSTITUTE MANUAL (ACI, 2019) AND CONFORMING TO UTAH DEPARTMENT OF TRANSPORTATION SPECIFICATIONS FOR PORTLAND CEMENT CONCRETE PAVEMENT OVER PROPERLY PREPARED NATURAL SOILS AND/OR PROPERLY PREPARED EXISTING FILL SOILS AND PROPERLY COMPACTED STRUCTURAL FILL WHERE SPECIFIED.
2. ALL STRUCTURAL FILL TO BE PLACED AND COMPACTED PER THE PROJECT GEOTECHNICAL REPORT OR TO A MINIMUM OF 95-PERCENT OF THE MAXIMUM DRY DENSITY AS DETERMINED BY THE AASHTO T-180 (D-1557) METHOD OF COMPACTION. LIFTS SHOULD BE PLACED PER GEOTECHNICAL RECOMMENDATIONS BUT SHOULD NOT EXCEED 8-INCH IN LOOSE THICKNESS.
3. REMOVE SURFACE VEGETATION AND OTHER DELETERIOUS MATERIALS OVER THE ENTIRE SITE PER THE PROJECT GEOTECHNICAL REPORT IN PREPARATION OF PROPOSED IMPROVEMENTS.



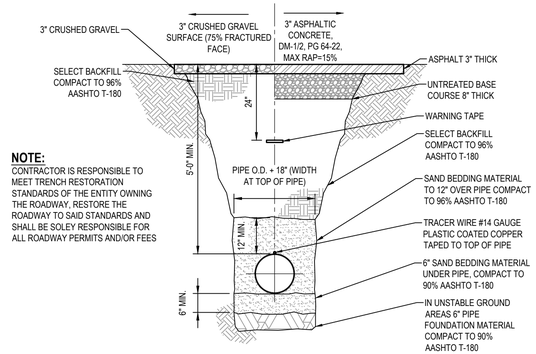
1 GRAVEL SECTION

SCALE: NONE



2 CONCRETE PAVED SECTION

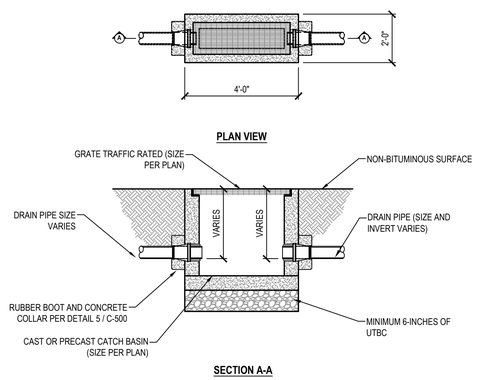
SCALE: NONE



NOTE:
CONTRACTOR IS RESPONSIBLE TO MEET TRENCH RESTORATION STANDARDS OF THE ENTITY OWNING THE ROADWAY, RESTORE THE ROADWAY TO SAID STANDARDS AND SHALL BE SOLEY RESPONSIBLE FOR ALL ROADWAY PERMITS AND/OR FEES

3 TYPICAL TRENCH SECTION

SCALE: 1/2" = 1'-0"



4 CATCH BASIN

SCALE: NONE

5 RUBBER BOOT AND CONCRETE COLLAR

SCALE: NONE

6 TRASH RACK GRATE, FLARED END SECTION

SCALE: NONE

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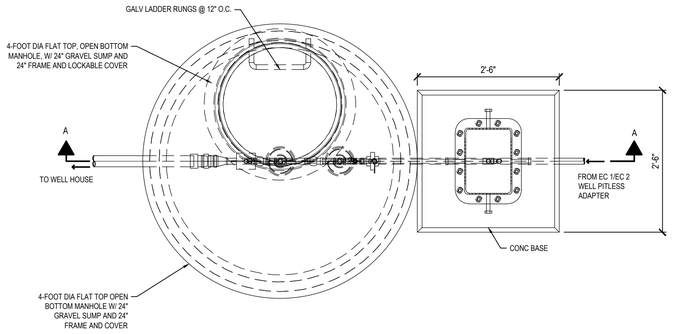
7-22-25
7091 6410-2202
RYAN BRADLEY
EXP. 3-31-2027
STATE OF UTAH

PERMIT SET 7/22/2025

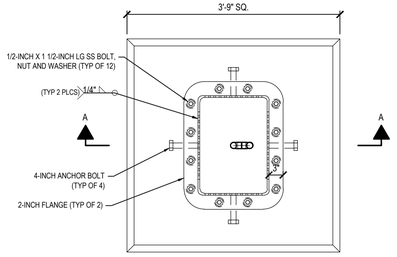
CIVIL DETAILS

PROJECT NUMBER 14018B
PRINT DATE 2025-07-22
PROJECT MANAGER R. BRADLEY
DESIGNED BY G. GAVIN

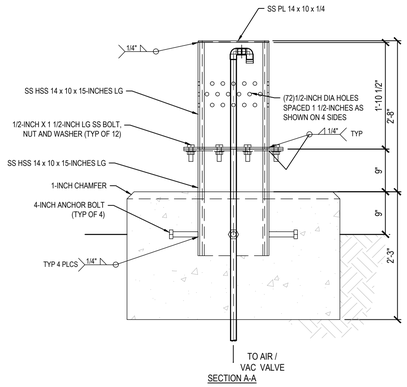
C-500



PLAN VIEW



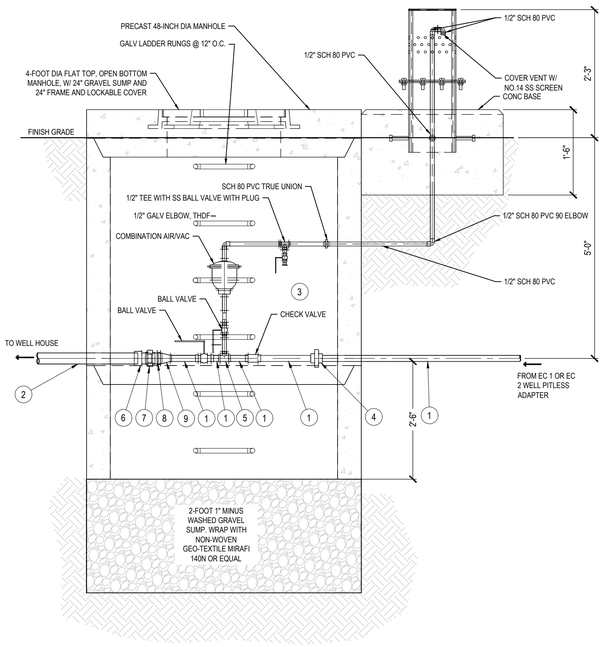
PLAN VIEW



SECTION A-A

2 VENT COVER

SCALE: NONE

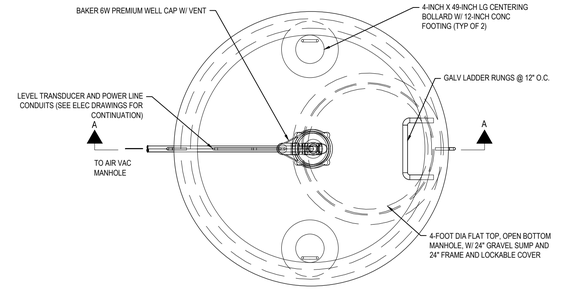


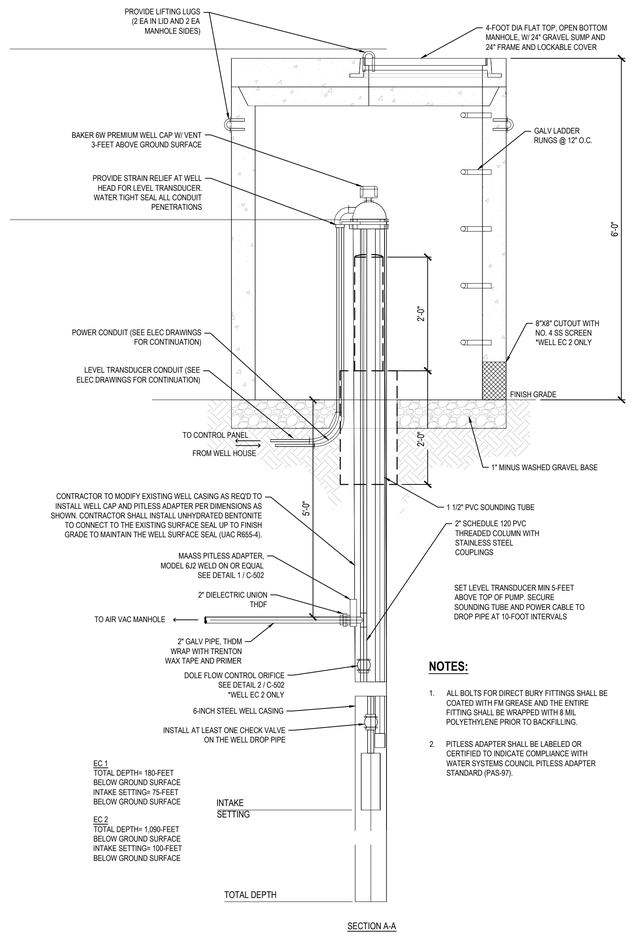
SECTION A-A

BILL OF MATERIALS					
ID	SIZE	DESCRIPTION	MATERIAL	FITTING	REMARKS
1	2"	PIPE	GALV	THDM	
2	4"	PIPE	DR-11 HDPE	PE X PE	
3	1/2"	BALL VALVE	GALV	THDM	
4	2"	UNION	GALV	THDF	
5	2"x1/2"	TEE, REDUCING	GALV	THDF	
6	4"	COMPRESSION COUPLER	BRASS	COMP X THDM	
7	4"	DIELECTRIC UNION	BRASS	THDF	
8	4"	PIPE NIPPLE, CLOSE TYPE	GALV	THDM	
9	2"x4"	COUPLING, REDUCING	GALV	THDF	

1 AIR VAC MANHOLE

SCALE: NONE





SECTION A-A

NOTES:

1. ALL BOLTS FOR DIRECT BURY FITTINGS SHALL BE COATED WITH FM GREASE AND THE ENTIRE FITTING SHALL BE WRAPPED WITH 8 MIL POLYETHYLENE PRIOR TO BACKFILLING.
2. PITLESS ADAPTER SHALL BE LABELED OR CERTIFIED TO INDICATE COMPLIANCE WITH WATER SYSTEMS COUNCIL PITLESS ADAPTER STANDARD (PAS-97).

3 EC 1/EC 2 WELL EQUIPPING

SCALE: NONE

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COBABE RANCH AND EDEN CROSSING WELL HOUSE AND BOOSTER STATION

(PWS. NO. 29132)
EDEN, UTAH

PROFESSIONAL ENGINEER
7-22-25
701 6410-2202
RYAN W. BRADLEY
EXP. 3-31-2027
STATE OF UTAH

PERMIT SET 7/22/2025

CIVIL DETAILS

PROJECT NUMBER	PRINT DATE
14018B	2025-07-22
PROJECT MANAGER	DESIGNED BY
R. BRADLEY	G. GAVIN

C-501

MAASS™ PITLESS ADAPTERS

MADE in the USA

MAASS™ PITLESS ADAPTERS

MAASS MODEL J SERIES OF PITLESS ADAPTER AND UNITS ALL FEATURE:

- Water contacts only 304 stainless steel and brass, eliminates rust, corrosion, and electrolysis in the adapter
- Durable cast steel housing
- Tapered 8° slip fitting for easy installation and removal of brass insert
- No obstruction left in well casing when brass insert is pulled
- Designed for shallow or deep settings and high working pressures
- Water System Council - PAS-97 (2012) listed
- Lead Free: ≤ .025% Lead Content

MAASS MODEL J SERIES ALL WETTED PARTS WELD ON PITLESS ADAPTERS

Features:
- 304 Stainless Steel
- Made in the USA
- Assembled with foreign and domestic components

Part Number	Model	Discharge Pipe (Inches)	Drop Pipe (Inches)	I.D. Casing Size (Inches)	Weight (Lbs.)	Working Load (Lbs.)	List Price Each
928100WS	4J1 WS	1	1	4-5	6.0	4000	See separate price list
928105WS	4J1-1/4 WS	1-1/4	1-1/4	4-5	7.0	5000	
928120WS	6J1 WS	1	1	6-7-8-+	6.0	4000	
928125WS	6J1-1/4 WS	1-1/4	1-1/4	6-7-8-+	7.0	5000	
928135WS	6J2 WS	2	2	6-7-8 +-	12.0	6000	

MAASS MODEL J WELD-ON PITLESS ADAPTER | Patented

Features:
- Permanently installed by welding for increased strength and durability
- J Series of adapters and units available with stainless steel, nickel-bronze inserts, stainless steel housings, and viton or teflon O-rings
- Only two one inch outlet size Model J Pitless needed to fit all well casing sizes

Part Number	Model	Discharge Pipe (Inches)	Drop Pipe (Inches)	I.D. Casing Size (Inches)	Weight (Lbs.)	Working Load (Lbs.)	List Price Each
928100	4J1	1	1	4-5	6.0	4000	See separate price list
928105	4J1 1/4	1-1/4	1-1/4	4-5	7.0	5000	
928110	4J1 1/2	1-1/2	1-1/2	4-5	8.5	5000	
928115	5J2	2	2	5	12.0	6000	
928120	6J1	1	1	6-7-8+	6.0	4000	
928125	6J1 1/4	1-1/4	1-1/4	6-7-8+	7.0	5000	
928130	6J1 1/2	1-1/2	1-1/2	6-7-8+	8.5	5000	
928135	6J2	2	2	6-7-8+	12.0	6000	
928140	6J2 1/2	2-1/2	2-1/2	6-7-8+	18.0	8000	
928145	8J3	3	3	8-10-12+	32.0	10000	
928150	10J4	4	4	10-12-14+	50.0	15000	

MAASS MODEL JJ WELD-ON PITLESS ADAPTER FOR SUCTION PUMPS | Patented

Features:
- Lateral (2") can be pressurized to meet state codes
- Wisconsin and Michigan State approved

Part Number	Model	Discharge Pipe (Inches)	Drop Pipe (Inches)	I.D. Casing Size (Inches)	Weight (Lbs.)	Working Load (Lbs.)	List Price Each
928200	4JJ1	1	2	4-5	13.0	4000	See separate price list
928205	6JJ1	1	2	6-7-8	13.0	4000	
928210	4JJ1 1/4	1-1/4	2	4-5	14.0	5000	
928215	6JJ1 1/4	1-1/4	2	6-7-8	14.0	5000	

1 MAASS PITLESS ADAPTER

SCALE: NONE

NO LEAD FLOW CONTROLS

APPLICATIONS:
- Save... Water, Energy & Money!
- Ideal for Potable Water Wells (regulating pumps on low yielding wells), Water Purification, Water softener, Electronic faucet, Tank-less water heater Geothermal equipment, Irrigation, Distributing machine and General industrial use.

FEATURES:
- NSF/ANSI 61 & NSF/ANSI 372 certified by CSA International
- Maintain a defined flow rate (tolerance is +/- 15%) regardless of pressure variations of the supply line (usually 0 to 125 PSI).
- Precise flow control improves system performance and in the case of plumbing systems, it provides comfort of use at low pressure as well as water and energy saving at high pressure (125 PSI).

CONSTRUCTION RATING:
- Nickel Plated, No lead brass housing
- EPDM O-ring
- Clear water only
- Acetal (celcon ₍₂₎) orifice
- Service Temp: 90 ° F (32 ° C)
- Max Pressure: 125 PSI (861 kPa) • Max Temp: 150 ° F (65 ° C)

• To order add Flow Rate to Part No. eg. FC-A0.13

PART NO.	INLET/OUTLET	LENGTH	AVAILABLE FLOW RATES	LIST PRICE-A
FC-A.....	3/8" FNPT	1.75"	0.13, 0.19, 0.25, 0.35, 0.50, 0.75, 1.00, 1.30, 1.50, 1.75, 2.00, 2.50, 3.00, 4.00	20.42
FC-B.....	1/2" FNPT	1.94"	0.25, 0.50, 0.75, 1.00, 1.30, 1.50, 1.75, 2.00, 2.50, 3.00, 3.50, 4.00, 4.50, 5.00, 6.00, 7.00	23.74
FC-C.....	3/4" FNPT	2.28"	1.00, 1.30, 1.50, 1.75, 2.00, 2.50, 3.00, 3.50, 4.00, 4.50, 5.00, 6.00, 7.00, 8.00, 9.00, 10.00, 13.00, 15.00, 20.00, 25.00, 30.00	31.42
FC-X.....	1" FNPT	2.75"	1.00, 1.50, 2.00, 2.50, 3.00, 3.50, 4.00, 4.50, 5.00, 6.00, 6.50, 7.00, 8.00, 9.00, 10.00, 12.00, 13.50, 15.00, 20.00, 25.00, 30.00	50.45
FC-Y.....	3/4" MNPT x FNPT	1.50"	1.00, 1.50, 2.00, 2.50, 3.00, 3.50, 4.00, 5.00, 6.00, 7.00, 8.00, 9.00	43.51
FC-P.....	1-1/4" MNPT	3.00"	3.00, 4.00, 5.00, 6.00, 6.50, 7.00, 8.00, 9.00, 10.00, 12.00, 13.00, 13.50, 15.00, 20.00, 25.00, 30.00	97.45
FC-T.....	1-1/2" MNPT	3.00"	5.00, 6.00, 6.50, 7.00, 8.00, 9.00, 10.00, 12.00, 13.00, 13.50, 15.00, 20.00, 25.00, 30.00	107.89
FC-F.....	2" MNPT	3.00"	10.00, 12.00, 13.00, 13.50, 15.00, 20.00, 25.00, 30.00	177.50
FC-H.....	2-1/2" MNPT	4.00"	30.00, 35.00, 40.00, 45.00, 50.00, 55.00, 60.00, 65.00, 70.00, 75.00, 80.00, 85.00, 90.00	400.24
FC-K.....	3" MNPT	4.00"	30.00, 35.00, 40.00, 45.00, 50.00, 55.00, 60.00, 65.00, 70.00, 75.00, 80.00, 85.00, 90.00, 95.00, 100.00, 105.00, 110.00, 115.00, 120.00	417.63

- Additional flow rates may be available. Please contact your Inside Sales Representative for availability.
- Also available in 316 SS
- Models A,B,C, and X are also available with a union connection

CDN

DOLE FLOW CONTROLS

- Self Cleaning
- Delivers a constant volume of water flow output over a wide pressure drop range
- Flexible orifice varies effective area inversely to the applied pressure
- At pressures below threshold point, flexible insert acts as a fixed orifice
- Above threshold point, insert begins to reduce orifice area maintaining desired flow output
- Flow rates maintained to within ±15% up to pressure drops of 125 psi
- Flow rate varies due to tolerances and water temperatures
- Used, where possible, in flow regulators with flow rates between 1 US GPM and 4 US GPM

- Nickel Plated Brass Housing
- To order add Flow Rate to Part No. eg. FCGA-.35NL

PART NO. -----	CONNECTION	HEX SIZE	LENGTH	AVAILABLE FLOW RATES	LIST PRICE-A
FCGA-..... NL	3/8 X 3/8 FPT	7/8"	1 3/4"	.125, .1875, .25, .35, .5, .75, 1	28.37
FCGB-..... NL	1/2 X 1/2 FPT	1"	2"	1, 1.5, 2, 2.5, 3, 3.5, 4, 5, 6	32.98
FCGC-..... NL	3/4 X 3/4 FPT	1-1/4"	2-1/4"	1, 1.5, 2, 2.5, 3, 3.5, 4, 4.5, 5, 6, 7, 8, 9, 10, 11.5	43.64
FCGY-..... NL	3/4 M X 3/4 F	1-1/4"	1-1/2"	1, 1.5, 2, 2.5, 3, 3.5, 4, 5, 6, 7, 8, 9, 10	61.54
FCGX-..... NL	1 X 1 FPT	1-1/2"	2-3/4"	1, 1.5, 2, 2.5, 3, 3.5, 4, 4.5, 5, 5.5, 6, 7, 8, 9, 10, 12, 13.5, 15, 20, 25, 30	70.12

- Zinc Plated Steel Housing
- To order add Flow Rate to Part No. eg. FCGH-30NL

PART NO. -----	CONNECTION	HEX SIZE	LENGTH	AVAILABLE FLOW RATES	LIST PRICE-A
FCGP-..... NL	1-1/4 X 1-1/4 MPT	1-5/8"	3"	2, 2.5, 3, 3.5, 4, 5, 7, 8, 9, 10, 12, 13.5, 15, 20, 25, 30	131.00
FCGT-..... NL	1-1/2 X 1-1/2 MPT	1-13/16"	3"	1, 1.5, 2, 2.5, 3, 3.5, 4, 5, 6, 7, 8, 9, 10, 12, 13.5, 15, 20, 25, 30	145.10
FCGF-..... NL	2 X 2 MPT	2-3/8"	3"	10, 11.5, 12, 13.5, 15, 20, 25, 30	247.40
FCGH-..... NL	2-1/2 X 2-1/2 MPT	2-7/8"	4"	30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80, 85, 90	548.28
FCGK-..... NL	3 X 3 MPT	3-1/2"	4"	30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80, 85, 90, 95, 100, 105, 110, 115, 120	570.04

CDN

2 DOLE FLOW CONTROL ORIFACE

SCALE: NONE

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FOR:
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CONTACT:
JOHN LEWIS
PHONE: 801.897.4880

COBABE RANCH AND EDEN CROSSING WELL HOUSE AND BOOSTER STATION

(PWS. NO. 29132)
EDEN, UTAH

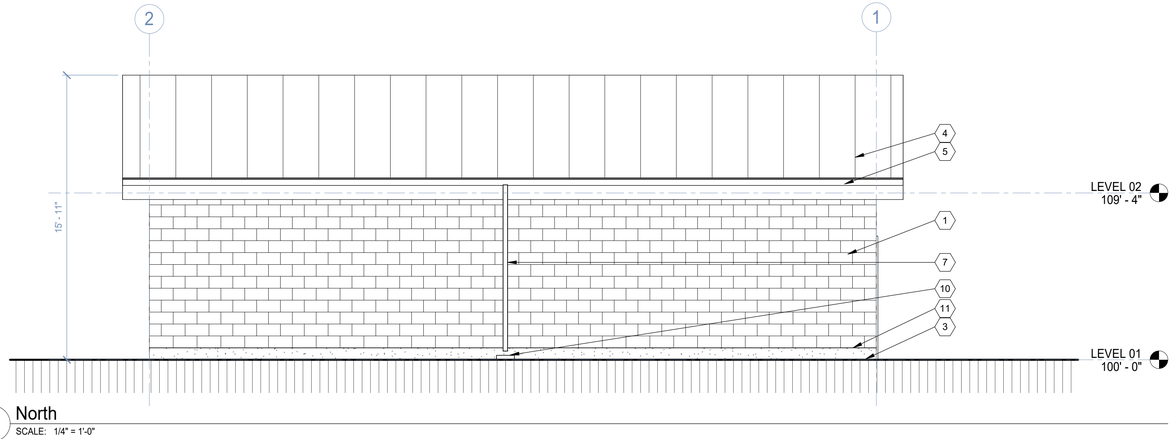
PROFESSIONAL ENGINEER
7-22-25
7013410-2202
RYAN T. BRADLEY
EXP. 3-31-2027
STATE OF UTAH

PERMIT SET 7/22/2025

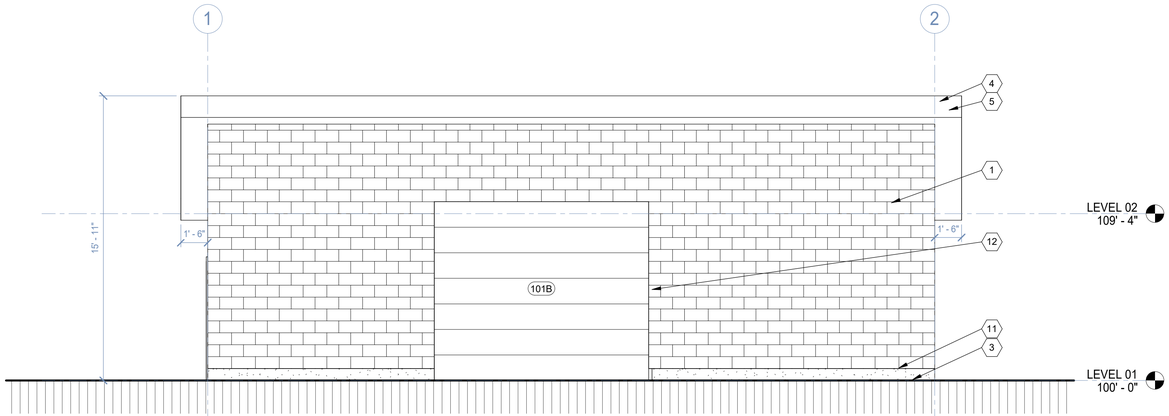
CIVIL DETAILS

PROJECT NUMBER 14018B
PRINT DATE 2025-07-22
PROJECT MANAGER R. BRADLEY
DESIGNED BY G. GAVIN

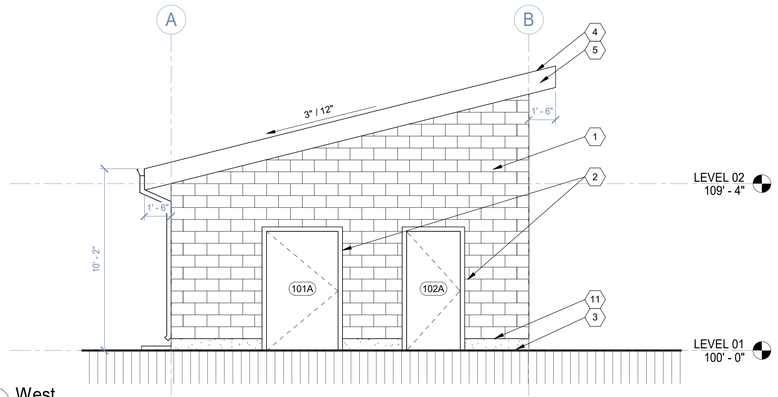
C-502



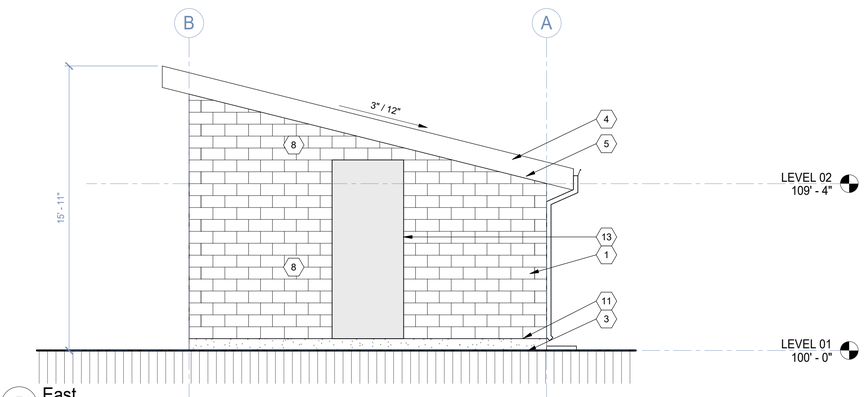
2 North
SCALE: 1/4" = 1'-0"



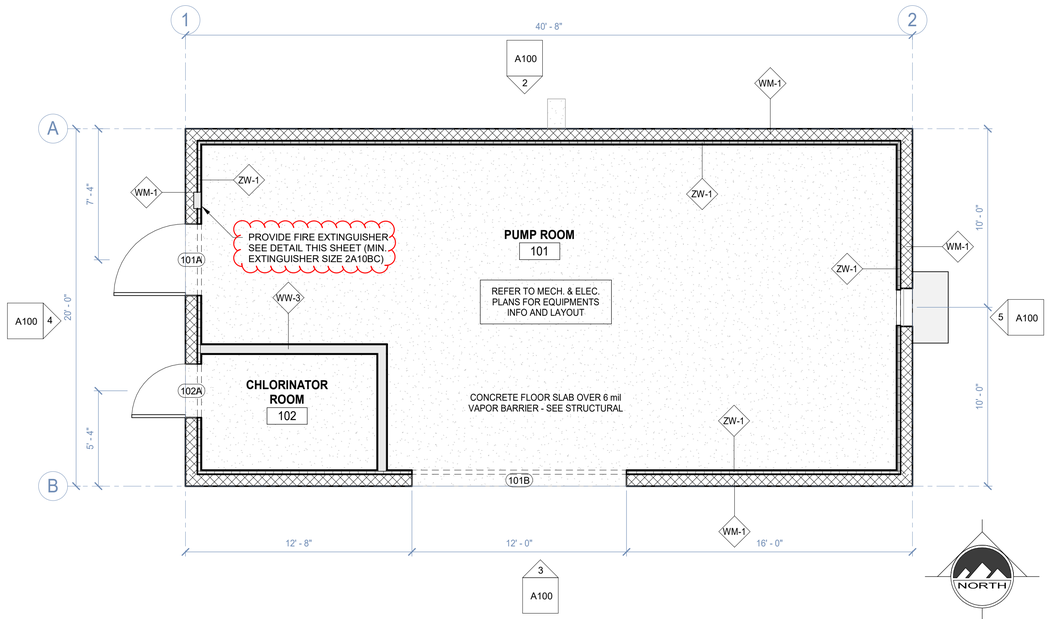
3 South
SCALE: 1/4" = 1'-0"



4 West
SCALE: 1/4" = 1'-0"



5 East
SCALE: 1/4" = 1'-0"



1 BOOSTER BUILDING - LEVEL 01
SCALE: 1/4" = 1'-0"

REFERENCED BUILDING CODES:	2021 IBC, 2021 IFC, 2021 IECC, 2021 IPC, 2021 IFGC, 2021 IMC, 2023 NEC, ICC/ANSI A117.1-2017
OCCUPANCY CLASSIFICATION:	U
SEPARATED USES:	NA
TYPE OF CONSTRUCTION:	VB
IMPORTANCE FACTORS:	SEISMIC: 1.0 SNOW: 1.0 WIND: 1.0
TABULAR HEIGHT LIMITATIONS:	40'-0"
TABULAR STORY LIMITATIONS:	1 (504.4)
TABULAR AREA/FLOOR:	5,500 (506.2)
ACTUAL HEIGHT:	16'-0"
ACTUAL STORIES:	1
BUILDING AREA:	801 SQ. FT.
OCCUPANT LOAD:	2 TABLE 1004.1.2
FIRE RATINGS:	N/A
FIRE SYSTEM:	N/A

KEYED NOTES:

1. 8" SPLIT FACE CMU WALL - COLOR BY OWNER
2. HOLLOW METAL FRAMED INSULATED DOOR - COLOR BY OWNER
3. FINISH GRADE
4. 26 GA STANDING SEAM METAL ROOF w/ VENTED CONTINUOUS RIDGE OVER ICE & WATER SHIELD - COLOR BY OWNER
5. VENTED ALUM. SOFFIT & FASCIA - COLOR BY OWNER
6. BOARD & BATTEN SIDING OVER ENDWALL TRUSS - COLOR BY OWNER - COORDINATE VENT LOCATION
7. ALUM. RAINGUTTER AND DOWNSPOUTS - COLOR BY OWNER
8. MECHANICAL LOUVERS COORDINATE LOCATION w/ MECHANICAL
9. ENDWALL ATTIC VENTS w/ INSECT SCREENS
10. PRECAST CONC. SPLASH BLOCK
11. 8" EXPOSED CONC. FOUNDATION
12. ROLL-UP DOOR - SEE SCHEDULE
13. HVAC SEE MECHANICAL

DOOR SCHEDULE

MARK	WIDTH	HEIGHT	FRAME TYPE	FINISH	FIRE RATING	HARDWARE	COMMENTS
101A	4' - 0"	6' - 8"	HOLLOW METAL	PAINT		LOCKSET	INSULATED
101B	12' - 0"	10' - 0"	NA			PULL CHAIN	INSULATED COIL DOOR WITH PULL CHAIN
102A	3' - 0"	6' - 8"	HOLLOW METAL	PAINT		LOCKSET	INSULATED
103A	4' - 0"	6' - 8"	HOLLOW METAL	PAINT		LOCKSET	INSULATED
Grand total: 4							

1. DOOR THRESHOLDS TO BE LESS THAN 1/2" ABOVE FINISH FLOOR.
2. ALL DOOR HARDWARE TO BE ADA LEVER TYPE.
3. EXIT DOORS ARE TO BE OPENABLE FROM THE INSIDE WITHOUT THE USE OF A KEY, SPECIAL KNOWLEDGE OR EFFORT.
4. DOORS TO MEET THE REQUIREMENTS OF IBC 1010.
5. DOOR HARDWARE TO BE LOCATED IN DOOR PER 1010.2.3
6. ALL LOCKSETS SHALL COMPLY WITH 1010.2.4 AND 1010.2.5

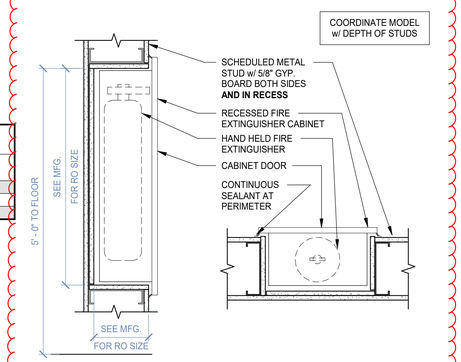
WALL SCHEDULE

MARK	DESCRIPTION	COMMENTS
CW-1	8" CONC. FOUNDATION WALL SEE STRUCTURAL	
ES-2	600S162-33 METAL STUDS @ 16" o.c. w/ 5/8" GYP. BOARD INTER. 1/2" SHEATHING, 1.5" EIFS EXTERIOR	
WM-1	8" SPLIT FACE CMU WALL - SEE STRUCTURAL PLANS	
WW-3	2x6 WOOD FRAMED WALL @ 16" o.c. w/ 5/8" GYP. BOARD EA. SIDE	
ZW-1	2" ZEE's w/ 2" RIGID INSULATION ATTACHED TO CMU w/ 7/16 OSB, FRP FACING	

ROOM SCHEDULE

NUMBER	NAME	FLOOR FINISH	BASE FINISH	WALL FINISHES				CEILINGS		COMMENTS
				NORTH	EAST	SOUTH	WEST	HEIGHTS	FINISH	
101	PUMP ROOM	SEALED CONCRETE	4" RUBBER	FRP	FRP	FRP	FRP	10' - 0"	GYP. BOARD	FRP OVER 1/2" OSB OVER 2" INSULATION
102	CHLORINATOR ROOM	SEALED CONCRETE	4" RUBBER	PAINT	PAINT	PAINT	PAINT	10' - 0"	GYP. BOARD	
103	WELL	SEALED CONCRETE	4" RUBBER	FRP	FRP	FRP	FRP	9' - 4"	GYP. BOARD	FRP OVER 1/2" OSB OVER 2" INSULATION

COMCHECK INSULATION VALUES:
ROOF INSULATION = R-32
WALL INSULATION = R-25
FOUNDATION INSULATION = R-10 RIGID
WINDOW U FACTOR = .320 MIN.



8 FIRE EXTINGUISHER CABINET
SCALE: 1 1/2" = 1'-0"

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FOR:
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EDEN, UTAH 84310

COBABE RANCH AND EDEN CROSSING WELL HOUSE AND BOOSTER STATION (PWS. NO. 29132) EDEN, UTAH

PROFESSIONAL ENGINEER
7-22-25
7211410-2202
RYAN P.
BRADLEY
EXP. 3-31-2027
STATE OF UTAH

PERMIT 07/22/2025

NO.	DATE	REVISION

BOOSTER BUILDING FLOOR PLAN

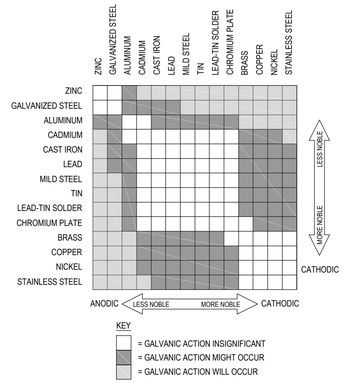
PROJECT NUMBER	DATE
14018B	07-22-2025
PROJECT MANAGER	DESIGNED BY
RB	CD

A100

NOTES:

1. REFER TO SHEET M-300 FOR MECHANICAL, PUMP AND VALVE SCHEDULES.
2. ALL BOLTS SHALL BE STAINLESS STEEL.
3. ALL PIPE, VALVES, FITTINGS, AND APPURTENANCES SHALL BE RATED FOR A MINIMUM PRESSURE OF 150 PSI.
4. PAINT SHALL BE WELL VENTILATED PER PAINT MANUFACTURER'S RECOMMENDATIONS DURING OFF GASSING PERIOD.
5. PROVIDE PIPE SUPPORTS AS SHOWN IN MECHANICAL DETAILS.
6. GALVANIZED AND DIP PIPE AND FITTINGS ARE SHOWN. CONTRACTOR MAY USE STEEL PIPE AND FITTINGS UPON APPROVAL OF PROJECT ENGINEER.
7. CONTRACTOR SHALL DETERMINE FITTINGS WHEN CONNECTING TO INSTRUMENTS. NOT ALL FITTINGS TO INSTRUMENTS ARE SHOWN.
8. WHERE DISSIMILAR METALS CONNECT (EXAMPLE: BRASS OR COPPER AND GALVANIZED IRON), REFER TO GALVANIC CORROSION TABLE SHOWN ON THIS SHEET. PROVIDE A DIELECTRIC COUPLER, DIELECTRIC FLANGE KIT, OR OTHER METHOD TO KEEP DISSIMILAR METALS FROM CONTACTING. CATHODIC PROTECTION IS REQUIRED FOR ALL CONDITIONS WITHIN THE GALVANIC CORROSION TABLE WHICH STATE "ACTION MIGHT OCCUR" OR "GALVANIC ACTION WILL OCCUR".
9. ALL BURIED METAL PIPE, FITTINGS, BOLTS, NUTS, AND APPURTENANCES SHALL BE WRAPPED IN WAX TAPE.
10. ALL FADED BACK ITEMS ARE FOR FUTURE PHASE.

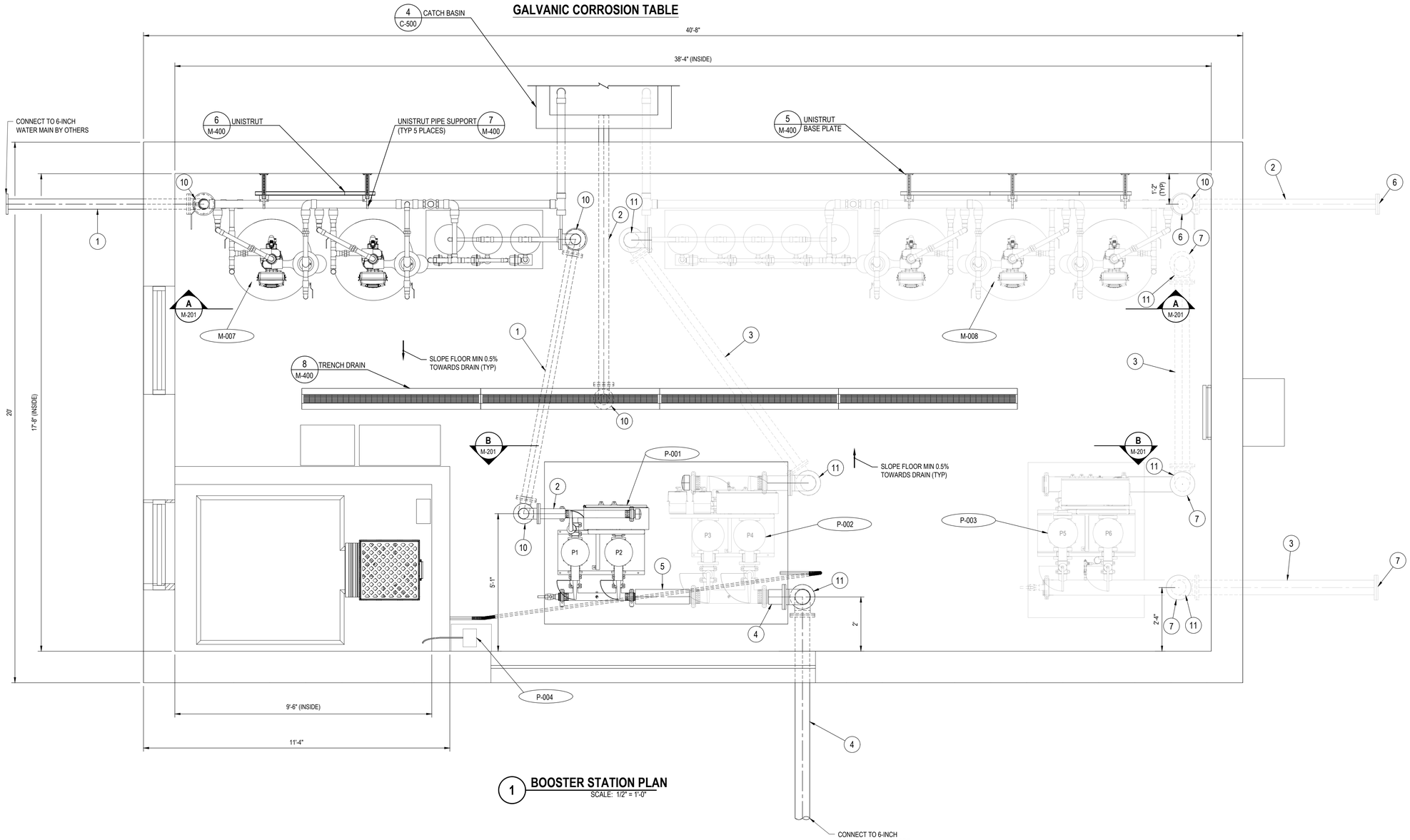
GALVANIC CORROSION TABLE



PIPE AND FITTINGS SCHEDULE					
ID	SIZE	SHORT DESCRIPTION	MATERIAL	FITTING	REMARKS
1	4"	PIPE SPOOL	DI	FL X FL	
2	4"	PIPE SPOOL	DI	FL X PE	
3	6"	PIPE SPOOL	DI	FL X FL	
4	6"	PIPE SPOOL	DI	FL X PE	
5	6"	PIPE SPOOL	DI	PE X PE	
6	4"	FLANGE BLIND	DI	FL	
7	6"	FLANGE BLIND	DI	FL	
8	4"	CAP	DI	THDF	
9	6"	CAP	DI	THDF	
10	4"	90° ELBOW	DI	FL	
11	6"	90° ELBOW	DI	FL	
12	4"	VIC FLANGE ADAPTER	DI	VIC	
13	6"	VIC FLANGE ADAPTER	DI	VIC	

ABBREVIATIONS

ABBREVIATION	DESCRIPTION
DI	DUCTILE IRON
FL	FLANGE
THDM	THREADED MALE
PE	PLAIN END



1 BOOSTER STATION PLAN
SCALE: 1/2" = 1'-0"

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CONTACT:
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COBABE RANCH AND EDEN CROSSING WEL HOUSE AND BOOSTER STATION (PWS. NO. 29132) EDEN, UTAH

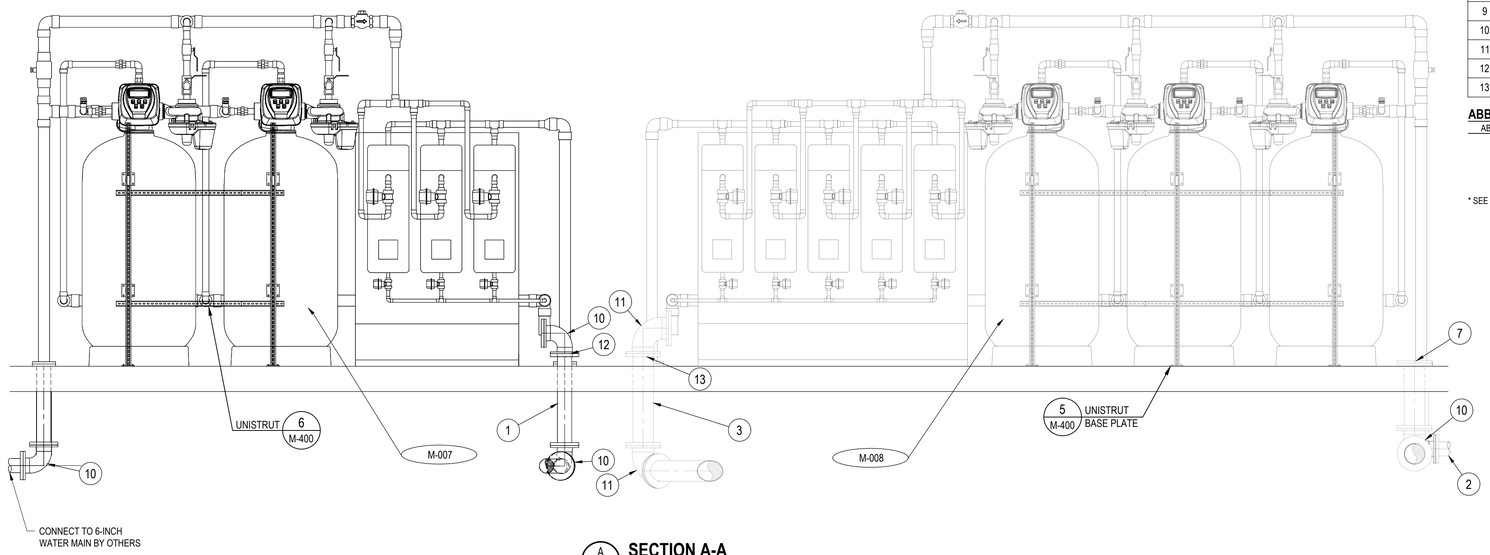
PROFESSIONAL ENGINEER
7-22-25
7091410-2202
RYAN W. BRADLEY
EXP. 3-31-2027
STATE OF UTAH

PERMIT SET 7/22/2025

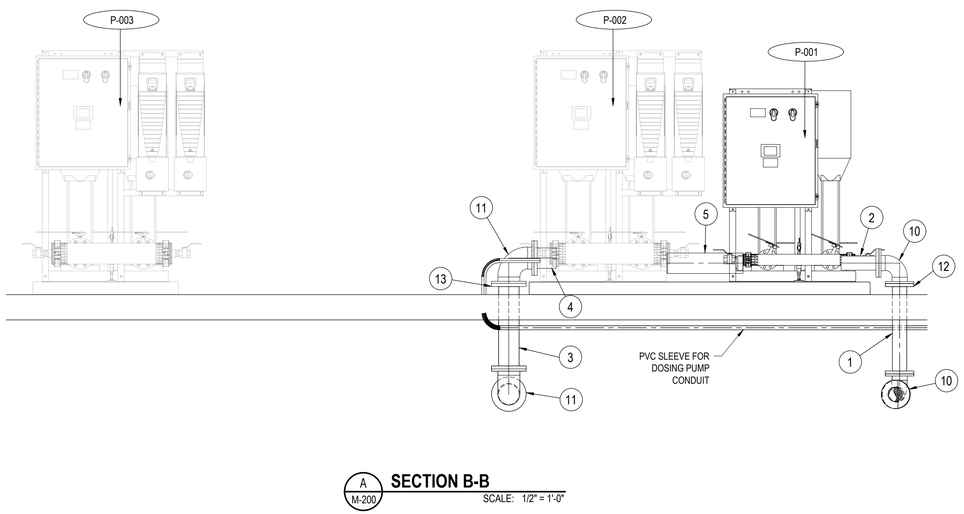
BOOSTER STATION MECHANICAL PLAN

PROJECT NUMBER	PRINT DATE
14018B	2025-07-22
PROJECT MANAGER	DESIGNED BY
R. BRADLEY	D. COOPER

M-200



A M-200 **SECTION A-A**
SCALE: 1/2" = 1'-0"



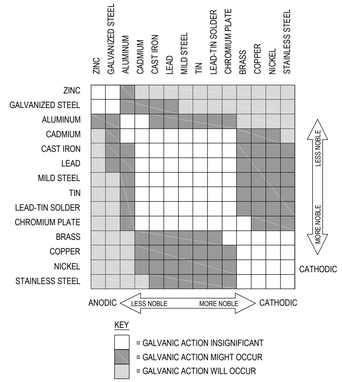
A M-200 **SECTION B-B**
SCALE: 1/2" = 1'-0"

PIPE AND FITTINGS SCHEDULE					
ID	SIZE	SHORT DESCRIPTION	MATERIAL	FITTING	REMARKS
1	4"	PIPE SPOOL	DI	FL X FL	
2	4"	PIPE SPOOL	DI	FL X PE	
3	6"	PIPE SPOOL	DI	FL X FL	
4	6"	PIPE SPOOL	DI	FL X PE	
5	6"	PIPE SPOOL	DI	PE X PE	
6	4"	FLANGE BLIND	DI	FL	
7	6"	FLANGE BLIND	DI	FL	
8	4"	CAP	DI	THDF	
9	6"	CAP	DI	THDF	
10	4"	90° ELBOW	DI	FL	
11	6"	90° ELBOW	DI	FL	
12	4"	VIC FLANGE ADAPTER	DI	VIC	
13	6"	VIC FLANGE ADAPTER	DI	VIC	

ABBREVIATIONS

ABBREVIATION	DESCRIPTION
DI	DUCTILE IRON
FL	FLANGE
THDM	THREADED MALE
PE	PLAIN END

* SEE NOTES ON SHEET M-200



GALVANIC CORROSION TABLE

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(PWS. NO. 29132)
EDEN, UTAH

PROFESSIONAL ENGINEER
7-22-25
7016410-2202
RYAN W. BRADLEY
EXP. 3-31-2027
STATE OF UTAH

PERMIT SET 7/22/2025

BOOSTER STATION MECHANICAL PLAN

PROJECT NUMBER 14018B
PRINT DATE 2025-07-22
PROJECT MANAGER R. BRADLEY
DESIGNED BY D. COOPER

M-201

Valve Schedule						
Well House						
Tag #	**Description/Type**	**Size**	**Material**	**Operation**	**Connection**	**Remarks**
V-001	Ball Valve	1/2-Inch	BRASS	Lever	Sweat	Apollo, Brass Model 94ALF20301, or Equal
V-002	Ball Valve	1/2-Inch	BRASS	Lever	Sweat	Apollo, Brass Model 94ALF20301, or Equal
V-003	Smooth Nosed Sampling Tap	1/2-Inch	BRASS	Lever	Threaded	Matco-Norca Model No. 646RLF, or Equal
V-004	Combination Air/Vac Valve	1/2-Inch	CAST IRON	N/A	Threaded	Val-Matic Model No. 15R50-3AT-C6V5Y, or Equal
V-005	Ball Valve	2-Inch	BRASS	Lever	Sweat	Apollo, Brass Model 94A20801, or Equal
V-006	Electrically Actuated Ball Valve	2-Inch	BRASS	Electric	Threaded	Valworx, Brass Model 567616C, or Equal
V-007	Check Valve	2-Inch	BRASS	N/A	Sweat	Apollo, Brass Model 61LF10801PR
V-008	Ball Valve	2-Inch	BRASS	Lever	Sweat	Apollo, Brass Model 94A20801, or Equal
V-009	Ball Valve	1/2-Inch	BRASS	Lever	Sweat	Apollo, Brass Model 94ALF20301, or Equal
V-010	Ball Valve	1/2-Inch	BRASS	Lever	Sweat	Apollo, Brass Model 94ALF20301, or Equal
V-011	Smooth Nosed Sampling Tap	1/2-Inch	BRASS	Lever	Threaded	Matco-Norca Model No. 646RLF, or Equal
V-012	Combination Air/Vac Valve	1/2-Inch	CAST IRON	N/A	Threaded	Val-Matic Model No. 15R50-3AT-C6V5Y, or Equal
V-013	Ball Valve	2-Inch	BRASS	Lever	Sweat	Apollo, Brass Model 94A20801, or Equal
V-014	Electrically Actuated Ball Valve	2-Inch	BRASS	Electric	Threaded	Valworx, Brass Model 567616C, or Equal
V-015	Check Valve	2-Inch	Brass	N/A	Sweat	Apollo, Brass Model 61LF10801PR
V-016	Ball Valve	2-Inch	BRASS	Lever	Sweat	Apollo, Brass Model 94A20801, or Equal
V-017	Combination Air/Vac Valve	2-Inch	CAST IRON	N/A	Threaded	Val-Matic Model No. 20C01-6BT-C6B5Y, or Equal

Mechanical Equipment Schedule			
Well House			
Tag #	Description/Type	HP/Size	Remarks
M-001	Pressure Transmitter	1/2-Inch	Rosemount 2088, Schneider IGP10/IAG10, or ABB 266
M-002	Pressure Gauge	1/2-Inch	Ashcroft Model 1279 (0 to 150 psi)
M-003	Mag Meter	2-Inch	Seimens SITRANS FM MAG 5000, or Hauser Promag W 400
M-004	Pressure Transmitter	1/2-Inch	Rosemount 2088, Schneider IGP10/IAG10, or ABB 266
M-005	Pressure Gauge	1/2-Inch	Ashcroft Model 1279 (0 to 150 psi)
M-006	Mag Meter	2-Inch	Seimens SITRANS FM MAG 5000, or Hauser Promag W 400

Mechanical Equipment Schedule			
Booster Station			
Tag #	Description/Type	HP/Size	Remarks
M-007	Backwashing Carbon Filter	N/A	Pacific Water Inc. Series 956 Backwashing Carbon Filter
M-008	Backwashing Carbon Filter	N/A	Pacific Water Inc. Series 959 Backwashing Carbon Filter

Pump Schedule			
Booster Station			
Tag #	Description/Type	HP/Size	Remarks
P-001	Booster Pump	15 HP / 460V (3 Phase)	Tiger Flow CDF10-8-D0HD2B
Future (Not Part Of Contract)			
P-002	Booster Pump	27 HP / 460V (3-Phase)	Tiger Flow CDF42-4/2-F0ND2B
P-003	Booster Pump	28 HP / 460V (3-Phase)	Tiger Flow CDF42-4/2-F0ND2B
P-004	Chemical Metering Pump with Pump Repair Kit and Safety Spill Kit (Future)	120V	Grundfos DDA 7.5-10AR

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COBABE RANCH AND EDEN CROSSING WELL HOUSE AND BOOSTER STATION

(PWS. NO. 29132)
EDEN, UTAH

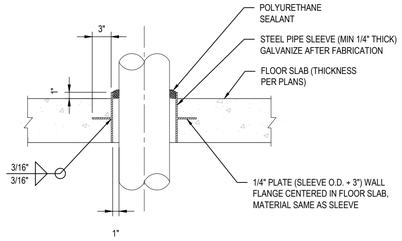
PROFESSIONAL ENGINEER
7-22-25
7061410-2202
RYAN J. W. BRADLEY
EXP. 3-31-2027
STATE OF UTAH

PERMIT SET 7/22/2025

MECHANICAL SCHEDULES

PROJECT NUMBER 14018B
PRINT DATE 2025-07-22
PROJECT MANAGER R. BRADLEY
DESIGNED BY D. COOPER

M-300

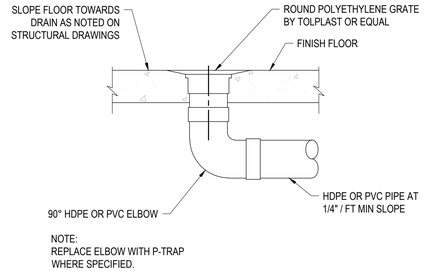


NOTE:

ALL FLOOR PENETRATIONS FOR HARD PIPING OF EQUIPMENT SHALL HAVE A FLOOR SLEEVE.

1 TYPICAL FLOOR PIPE DETAIL

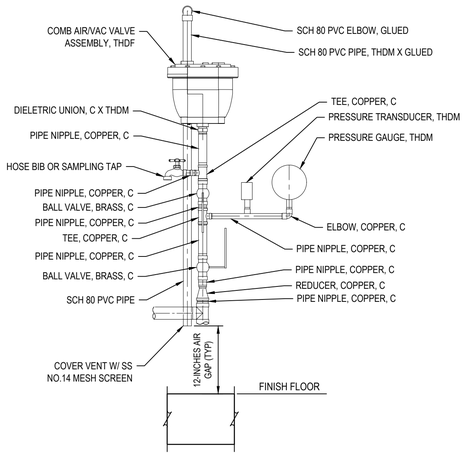
SCALE: NONE



NOTE:
REPLACE ELBOW WITH P-TRAP WHERE SPECIFIED.

2 TYPICAL FLOOR DRAIN DETAIL

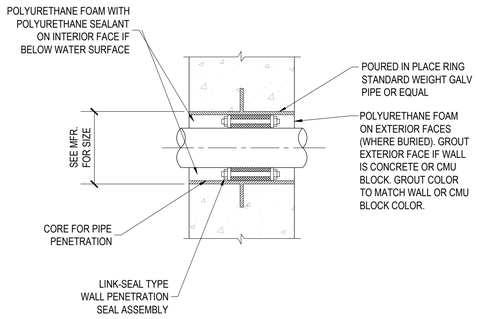
SCALE: NONE



NOTE: REFER TO PROJECT DRAWINGS FOR AIR/VAC, VALVES AND INSTRUMENTATION INFORMATION AND SIZING. CONTRACTOR SHALL DETERMINE PIPE FITTINGS AND APPURTENANCES REQ'D.

3 TYPICAL COMBINATION AIR/VAC

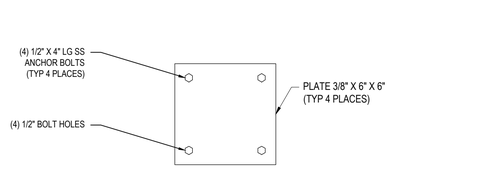
SCALE: NONE



NOTES:
1. PIPE SLEEVE FOR WALL PENETRATION SEAL ASSEMBLY SIZED BY MFR.
2. BOLTS SHALL BE SS.

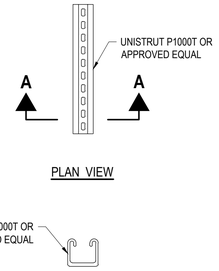
4 TYPICAL LINK SEAL DETAIL

SCALE: NONE



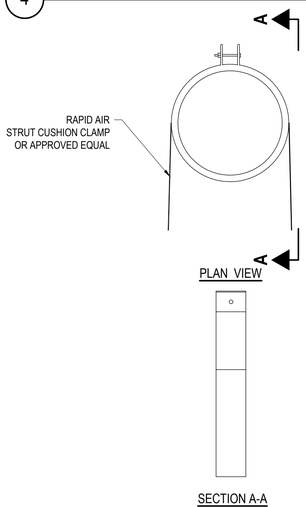
5 TYPICAL UNISTRUT BASE PLATE DETAIL

SCALE: NONE



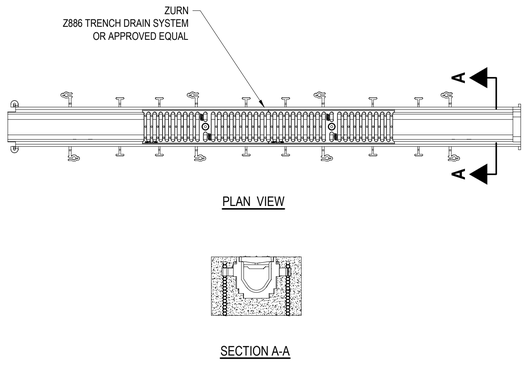
6 TYPICAL UNISTRUT DETAIL

SCALE: NONE



7 TYPICAL UNISTRUT PIPE SUPPORT DETAIL

SCALE: NONE



8 TYPICAL TRENCH DRAIN DETAIL

SCALE: NONE

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COBABE RANCH AND EDEN CROSSING WELL HOUSE AND BOOSTER STATION

(PWS. NO. 29132)
EDEN, UTAH

PROFESSIONAL ENGINEER
7-22-25
7019410-2202
RYAN T.
BRADLEY
EXP: 3-31-2027
STATE OF UTAH

PERMIT SET 7/22/2025

MECHANICAL DETAILS

PROJECT NUMBER 14018B
PRINT DATE 2025-07-22
PROJECT MANAGER R. BRADLEY
DESIGNED BY D. COOPER

M-400

DESIGN CRITERIA

1. GOVERNING BUILDING CODE: **2021 IBC**
   A. RISK CATEGORY = **IV**

2. ROOF LOADING:
   A. ROOF LIVE LOAD = 20 PSF
   B. ROOF DEAD LOAD = 20 PSF
      a. TOP CHORD DEAD LOAD = 13 PSF
      b. BOTTOM CHORD DEAD LOAD = 7 PSF
   C. ROOF SNOW LOAD (FLAT), p_f = 58 PSF
      a. GROUND SNOW LOAD, p_g = 58 PSF
      b. SNOW EXPOSURE FACTOR, C_e = 1.0
      c. THERMAL FACTOR, C_t (WELL HOUSE) = 1.20
      d. THERMAL FACTOR, C_t (BOOSTER PUMP) = 1.00
      e. SNOW LOAD IMPORTANCE FACTOR, I_s = 1.20
      f. SLOPE FACTOR, C_s (WELL HOUSE) = 0.79
      g. SLOPE FACTOR, C_s (BOOSTER PUMP) = 0.97
      h. DRIFT SURCHARGE LOADS = (SEE ROOF PLANS)
   D. RAIN LOADS:
      a. RAIN INTENSITY, I = 1.5 IN/HR

3. SEISMIC LOADING (WELL HOUSE):
   A. S_S = 0.954g
   B. S_1 = 0.340g
   C. S_{DS} = 0.763g
   D. S_{D1} = 0.444g
   E. BASIC SEISMIC FORCE RESISTING SYSTEM = BEARING WALL SYSTEM: SPECIAL REINFORCED MASONRY SHEAR WALLS
   F. ANALYSIS PROCEDURE = EQUIVALENT LATERAL FORCE PROCEDURE
   G. RESPONSE MODIFICATION FACTOR, R = 5.0
   H. DESIGN BASE SHEAR = 0.229W
   I. SEISMIC RESPONSE COEFFICIENT, C_S = 0.229
   J. SEISMIC DESIGN CATEGORY = D
   K. SITE CLASS = D (DEFAULT)
   L. IMPORTANCE FACTOR, I_e = 1.5

4. SEISMIC LOADING (BOOSTER PUMP):
   A. S_S = 0.917g
   B. S_1 = 0.324g
   C. S_{DS} = 0.734g
   D. S_{D1} = 0.427g
   E. BASIC SEISMIC FORCE RESISTING SYSTEM = BEARING WALL SYSTEM: SPECIAL REINFORCED MASONRY SHEAR WALLS
   F. ANALYSIS PROCEDURE = EQUIVALENT LATERAL FORCE PROCEDURE
   G. RESPONSE MODIFICATION FACTOR, R = 5.0
   H. DESIGN BASE SHEAR = 0.220W
   I. SEISMIC RESPONSE COEFFICIENT, C_S = 0.220
   J. SEISMIC DESIGN CATEGORY = D
   K. SITE CLASS = D (DEFAULT)
   L. IMPORTANCE FACTOR, I_e = 1.5

5. WIND LOADING:
   A. BASIC WIND SPEED, V = 114 MPH - 3 SEC GUST
   B. ASD WIND SPEED, V_{asd} = 89 MPH - 3 SEC GUST
   C. EXPOSURE = C
   D. INTERNAL PRESSURE COEFFICIENT, GC_{pi} = ± 0.18
   E. WIND DIRECTIONALITY FACTOR, K_d = 0.85
   F. WIND TOPOGRAPHIC FACTOR, K_{zt} = 1.0
   G. COMP. & CLADDING WIND PRESSURE:

COMPONENTS & CLADDING DESIGN WIND PRESSURE (PSF)

LOCATION			EFFECTIVE WIND AREA (FT^2)				
			< 10	20	50	100	>500
WALLS	ZONE 5: WITHIN 3-FT OF BUILDING CORNER		-31.7	-29.7	-26.7	-24.6	-19.6
	ZONE 4: ALL OTHER AREAS		-25.6	-24.6	-23.6	-22.1	-19.6
	ZONE 4 & 5: POSITIVE PRESSURES		16.4	16.0	16.0	16.0	16.0
ROOF	ZONE 3R: WITHIN 3-FT OF ROOF RIDGE AT GABLE ENDS		-75.7	-51.7	-39.7	-39.7	-39.7
	ZONE 3E, 2R & 2N: WITHIN 3-FT OF ROOF CORNERS, ROOF RIDGE & GABLE ENDS		-53.7	-47.7	-37.7	-31.7	-27.7
	ZONE 2E & 1: WITHIN 3-FT OF ROOF EDGE & IN ROOF FIELD		-33.7	-33.7	-29.7	-25.6	-19.6
	ALL ZONES: POSITIVE PRESSURES		16.0	16.0	16.0	16.0	16.0
	N/A		-	-	-	-	-
	N/A		-	-	-	-	-
PARAPETS	N/A	LOAD CASE A	-	-	-	-	-
		LOAD CASE B	-	-	-	-	-
	N/A	LOAD CASE A	-	-	-	-	-
		LOAD CASE B	-	-	-	-	-

6. SERVICEABILITY CRITERIA:
   A. DEFLECTION LIMITS: TOTAL L/240, LIVE / SNOW L/360
      a. ROOF
   B. ALLOWABLE STORY DRIFT:
      a. SEISMIC 0.010 x STORY HEIGHT

DEFERRED SUBMITTALS

1. DEFERRED SUBMITTALS ARE THOSE PORTIONS OF THE DESIGN WHICH ARE NOT SUBMITTED AT THE TIME OF PERMIT APPLICATION AND WHICH ARE TO BE SUBMITTED TO THE BUILDING OFFICIAL WITHIN A SPECIFIED PERIOD.

2. SUBMITTAL DOCUMENTS FOR DEFERRED SUBMITTAL ITEMS SHALL BE SUBMITTED TO THE ENGINEER OF RECORD THROUGH THE ARCHITECT AND GENERAL CONTRACTOR WITHIN 6 WEEKS OF AWARD OF CONTRACT TO THE GENERAL CONTRACTOR. ONCE THE SUBMITTAL DOCUMENTS HAVE BEEN FOUND TO BE IN GENERAL CONFORMANCE TO THE CONTRACT DOCUMENTS, THE ENGINEER OF RECORD WILL FORWARD THEM TO THE ARCHITECT WITH A NOTATION INDICATING THAT THEY ARE IN GENERAL CONFORMANCE WITH THE DESIGN OF THE BUILDING. THE ARCHITECT WILL FORWARD THE DEFERRED SUBMITTAL DOCUMENTS TO THE GENERAL CONTRACTOR WHO WILL MAINTAIN ONE SET ON SITE FOR REFERENCE BY THE CITY INSPECTOR. THE DEFERRED SUBMITTAL ITEMS SHALL NOT BE INSTALLED UNTIL THE SUBMITTAL DOCUMENTS HAVE BEEN APPROVED BY THE BUILDING OFFICIAL.

3. ITEMS THAT ARE SUBMITTED FOR CONSIDERATION AS DEFERRED SUBMITTALS ARE AS FOLLOWS:
   A. PREFABRICATED STEEL STAIRS, HANDRAILS, GUARDRAILS, LADDERS, ETC.
   B. PRE-ENGINEERED WOOD TRUSSES
   C. SEISMIC BRACING OF ALL ARCHITECTURAL, MECHANICAL, PLUMBING, AND ELECTRICAL ITEMS WHERE REQUIRED PER ASCE 7 AND THE PROJECT SPECIFICATIONS

SHOP DRAWINGS

1. SHOP DRAWINGS SHALL BE SUBMITTED TO THE GENERAL CONTRACTOR PRIOR TO FABRICATION OR ERECTION FOR THE FOLLOWING ITEMS:
   A. CONCRETE MIX DESIGNS
   B. MASONRY BLOCK, GROUT, & MORTAR MIX DESIGNS
   C. REINFORCING STEEL
   D. MISCELLANEOUS METALS (INCLUDING BUT NOT LIMITED TO PREFABRICATED STEEL STAIRS, HANDRAILS, GUARDRAILS, LADDERS, ETC.)
   E. PRE-ENGINEERED WOOD TRUSSES

2. THE GENERAL CONTRACTOR SHALL SUBMIT ELECTRONIC COPIES OF ALL SHOP DRAWINGS TO THE STRUCTURAL ENGINEER FOR REVIEW PRIOR TO FABRICATION OR ERECTION. FIVE (5) WORKING DAYS (MINIMUM) SHALL BE ALLOWED FOR THE REVIEW OF THESE SHOP DRAWINGS BY THE STRUCTURAL ENGINEER.

3. THE GENERAL CONTRACTOR WILL REVIEW AND STAMP ALL SHOP DRAWINGS AND PRODUCT DATA FOR CONFORMANCE WITH THE CONSTRUCTION DOCUMENTS PRIOR TO SUBMISSION. ANY SHOP DRAWINGS OR PRODUCT DATA NOT REVIEWED AND STAMPED BY THE GENERAL CONTRACTOR WILL BE RETURNED WITHOUT REVIEW.

4. ANY SHOP DRAWING NOT CHECKED AND INITIALED BY THE SUPPLIER/DETAILER PRIOR TO SUBMITTING FOR ARCHITECTURAL AND ENGINEERING REVIEW, WILL BE RETURNED WITHOUT REVIEW.

5. THE CONSTRUCTION DOCUMENTS MAY NOT BE REPRODUCED AND USED TO CREATE SHOP DRAWINGS WITHOUT THE PERMISSION FROM THE ARCHITECT OR ENGINEER.

GENERAL

1. ALL CONSTRUCTION SHALL BE IN CONFORMANCE WITH THE GOVERNING BUILDING CODE AND SUPPLEMENTS UNLESS HIGHER STANDARD IS REQUIRED BY LOCAL BUILDING OFFICIAL.

2. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL ELEMENTS AS SHOWN ON THE CONTRACT DOCUMENTS UNLESS SPECIFICALLY NOTED OTHERWISE.

3. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS AT THE SITE.

4. THE CONTRACTOR IS RESPONSIBLE FOR MEETING ALL APPLICABLE OSHA SAFETY REQUIREMENTS DURING CONSTRUCTION AND SHALL BE RESPONSIBLE FOR SAFETY AND PROTECTION WITHIN AND ADJACENT TO THE SITE.

5. AT ANY GIVEN TIME DURING AND AFTER CONSTRUCTION, THE CONTRACTOR AND/OR OWNER SHALL ENSURE THE LOADS ON THE STRUCTURE DO NOT EXCEED THE SPECIFIED DESIGN LOADS. CONSTRUCTION MATERIAL SHALL BE SPREAD OUT IF PLACED ON FRAMED FLOORS OR ROOF.

6. DO NOT SCALE DRAWINGS. IF DIMENSIONS ARE IN QUESTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING CLARIFICATION FROM THE ENGINEER BEFORE CONTINUING WITH CONSTRUCTION.

7. THE TYPICAL DETAILS SHALL BE USED WHEREVER APPLICABLE UNLESS OTHERWISE NOTED ON THE DRAWINGS. SPECIFIC NOTES AND DETAILS ON DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS.

8. ALL OMISSIONS OR CONFLICTS BETWEEN THE VARIOUS ELEMENTS OF THE WORKING DRAWINGS AND/OR SPECIFICATIONS SHALL BE BROUGHT TO THE ATTENTION OF THE STRUCTURAL ENGINEER BEFORE PROCEEDING WITH ANY WORK INVOLVED. IN CASE OF CONFLICT, FOLLOW MOST STRINGENT REQUIREMENT AS DETERMINED BY STRUCTURAL ENGINEER WITHOUT COST TO OWNER.

9. THE CONTRACT STRUCTURAL DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SHORING, SEQUENCES, AND PROCEDURES.

10. WHERE REFERENCE IS MADE TO VARIOUS TEST STANDARDS FOR MATERIALS, SUCH STANDARDS SHALL BE THE LATEST EDITION AND/OR ADDENDUM.

11. ESTABLISH AND VERIFY ALL OPENINGS AND INSERTS FOR ARCHITECTURAL, MECHANICAL, ELECTRICAL, AND PLUMBING WITH APPROPRIATE TRADES, DRAWINGS, AND SUBCONTRACTORS PRIOR TO CONSTRUCTION.

12. **DO NOT PENETRATE ANY STRUCTURAL ELEMENTS** (BEAMS, COLUMNS, WALLS, SLABS, STEEL DECKS, ETC.) WITHOUT PRIOR WRITTEN APPROVAL OF STRUCTURAL ENGINEER THROUGH ARCHITECT.

13. ANY ENGINEERING DESIGN PROVIDED BY OTHERS AND SUBMITTED FOR REVIEW SHALL BEAR THE SEAL OF A CIVIL OR STRUCTURAL ENGINEER REGISTERED IN THE STATE IN WHICH THE PROJECT IS LOCATED.

PRE-CONSTRUCTION MEETINGS

1. A PRE-CONSTRUCTION MEETING IS RECOMMENDED PRIOR TO THE START OF CONSTRUCTION OF THE STRUCTURE. AT THE CONTRACTOR'S OPTION, THE PRE-CONSTRUCTION MEETING MAY TAKE PLACE PRIOR TO THE START OF SHOP DRAWING PRODUCTION.

2. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO SCHEDULE THE PRE-CONSTRUCTION MEETING WITH ALL APPLICABLE PARTIES INCLUDING (BUT NOT LIMITED TO) THE CONTRACTOR, SUB-CONTRACTORS, ARCHITECT, STRUCTURAL ENGINEER, AND SPECIAL INSPECTOR.

FOUNDATIONS

1. ALL FOOTINGS SHALL BEAR 24" MINIMUM ONTO ORIGINAL UNDISTURBED EARTH OR ENGINEERED FILL COMPACTED TO 95% OF MAXIMUM RELATED DENSITY BASED ON ASTM D1557. SUCH FILL SHALL BE PLACED IN LAYERS NOT EXCEEDING 8-INCHES IN DEPTH.

2. ALLOWABLE SOIL BEARING PRESSURE IS **1500** PSF (ASSUMED PER CODE MINIMUM). BOTTOM OF FOOTINGS SHALL BE A MINIMUM OF **40**-INCHES BELOW LOWEST ADJACENT FINAL GRADE FOR FROST PROTECTION.

3. **A 1.33** ALLOWABLE SOIL BEARING PRESSURE INCREASE IS ALLOWED FOR WIND & SEISMIC LOADING.

4. ALL WATER SHALL BE REMOVED FROM FOUNDATION EXCAVATION PRIOR TO PLACING OF CONCRETE. DO NOT PLACE CONCRETE UNDER WATER OR ON FROZEN GROUND.

5. ANY FILL TO BE PLACED UNDER THE BUILDING AND FOOTINGS SHALL BE A WELL GRADED GRANULAR MATERIAL WITHIN THE LIMITS OF THE FOLLOWING GRADATION:

SIEVE SIZE	PERCENT PASSING
4"	100
1"	60-90
NO. 4	30-60
NO. 40	10-30
NO. 200	5-12

6. WIDTH OF COMPACTED STRUCTURAL FILL SHALL EXTEND A MINIMUM DISTANCE EQUAL TO THE DEPTH OF FILL BEYOND THE EDGES OF THE FOOTINGS.

7. ALL FILL AND BACK FILL SHALL BE COMPACTED TO A MINIMUM OF 95% OF MAXIMUM RELATIVE DENSITY FOR BUILDING CONSTRUCTION AND 90% FOR GENERAL SITE WORK.

8. ANY UNUSUAL SOIL CONDITIONS (WATER, SOFT LAYERS, ROCK OUTCROPPINGS, ETC. ENCOUNTERED DURING EXCAVATION FOR FOOTINGS SHOULD BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE STRUCTURAL AND SOIL ENGINEERS PRIOR TO PROCEEDING.

STEEL REINFORCING

1. TYPICAL REINFORCING BAR STRENGTHS:
   A. REINFORCING (NON-WELDABLE) = ASTM A615, DEFORMED, Fy = 60 KSI (420 MPa)
   B. REINFORCING (WELDABLE) = ASTM A706, DEFORMED, Fy = 60 KSI (420 MPa)

2. TYPICAL CLEAR CONCRETE COVERAGES:
   A. CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH = 3"
   B. FORMED CONCRETE WATER RETENTION STRUCTURES OR OTHERWISE COVERED UNDER ACI 350 = 2"
   C. FORMED CONCRETE EXPOSED TO EARTH OR WEATHER = 2" (#6 AND LARGER); = 1-1/2" (#5 AND SMALLER)
   D. ALL OTHERS PER LATEST EDITION OF ACI 318.

3. TYPICAL CLEAR MASONRY COVERAGES:
   A. MASONRY FACE EXPOSED TO EARTH OR WEATHER: = 2" (#6 AND LARGER); = 1-1/2" (#5 AND SMALLER)
   B. MASONRY NOT EXPOSED TO EARTH OR WEATHER: = 1-1/2"

4. ALL BARS PER CRSI SPECIFICATIONS AND HANDBOOK. LATEST ACI CODE AND DETAILING MANUAL APPLY. SECURELY TIE ALL BARS IN LOCATION BEFORE PLACING CONCRETE OR MASONRY. REINFORCING BAR SPACINGS GIVEN ARE MAXIMUM ON CENTERS.

5. ALL REINFORCING TO BE WELDED SHALL BE WELDED IN ACCORDANCE WITH AWS D1.4. NO TACK WELDING OF REINFORCING BARS IS ALLOWED WITHOUT PRIOR REVIEW OF PROCEDURE BY STRUCTURAL ENGINEER.

CONCRETE

1. CONCRETE SHALL CONFORM TO ALL REQUIREMENTS OF ACI 318-19 "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE", EXCEPT AS MODIFIED BY THE SUPPLEMENTAL REQUIREMENTS BELOW:

NO WATER TO BE ADDED TO CONCRETE ON SITE EITHER BEFORE OR AFTER PLACEMENT

ELEMENT TYPE	MINIMUM COMP. STRENGTH, f'c (psi)	EXPOSURE CLASSES F	S	W	C	CEMENT TYPE	MAX. W/C RATIO	AIR CONTENT %	MAX. AGG. SIZE	MAX. FLY ASH %	APPLICABLE *SPECIFIC INSTRUCTION NOTES
FOOTINGS	3000	F0	S0	W0	C1	II OR IL	0.45	--	3/4"	25	
FOUNDATION WALLS, PEDESTALS, & GRADE BEAMS	4500	F2	S0	W0	C1	II OR IL	0.45	6	3/4"	25	
INTERIOR SLAB ON GRADE	4000	F0	S0	W0	C0	II OR IL	0.45	--	1 1/2"	25	

2. CONCRETE SHALL ATTAIN THE LISTED MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS.

3. AIR CONTENT TOLERANCE IS +/- 1-1/2% AT THE TIME OF FINAL PLACEMENT.

4. AIR ENTRAINMENT SHALL BE ADJUSTED FOR THE USE OF ADMIXTURES AND FLY ASH.

5. SUPERPLASTICIZER MAY BE ADDED TO INCREASE SLUMP AS REQUIRED FOR PLACEMENT.

6. CALCIUM CHLORIDE SHALL NOT BE ADDED TO THE CONCRETE MIX.

7. FOR EXPOSURE CLASS F3, THE MAXIMUM PERCENTAGE OF POZZOLAN IN CONCRETE MIX SHALL BE IN ACCORDANCE WITH SECTION 26.4.2.2 (B) OF ACI 318-19.

8. USE TYPE V CEMENT WHEN HIGH SULFATE RESISTANCE IS REQUIRED BY THE GEOTECHNICAL REPORT OR WHEN THE 'S' EXPOSURE CLASS IS DESIGNATED AS S2 OR S3. IF S3 IS REQUIRED, POZZOLAN OR SLAG CEMENT IN ACCORDANCE WITH ASTM C1012 IS ALSO REQUIRED.

9. MATERIAL DESIGNATIONS:
   A. CEMENT = ASTM C150 OR ASTM C595
   B. NORMAL WEIGHT AGGREGATES = ASTM C33
   C. LIGHTWEIGHT AGGREGATES = ASTM C330
   D. FLY ASH, CLASS F POZZOLAN = ASTM C618
   E. DEFORMED BAR ANCHORS (DBA) = ASTM A496
   F. HEADED STUD ANCHORS (HSA) = ASTM A108
   G. AIR ENTRAINMENT ADMIXTURES = ASTM C260
   H. WATER REDUCING ADMIXTURES = ASTM C494, TYPE 'A'
   I. RETARDING ADMIXTURES = ASTM C494, TYPE 'B'
   J. WATER REDUCING & RETARDING ADMIXTURES = ASTM C494, TYPE 'D'
   K. HIGH RANGE WATER REDUCING ADMIXTURES = ASTM C494, TYPE 'F'
   L. HIGH RANGE WATER REDUCING & RETARDING ADMIXTURES = ASTM C494, TYPE 'G'
   M. ADMIXTURES ARE TO COME FROM AN ISO9001 QUALITY CERTIFIED MANUFACTURER. ALL ADMIXTURES ARE TO COME FROM THE SAME MANUFACTURER TO ENSURE COMPATIBILITY.
   N. NO ALUMINUM CONDUIT OR PRODUCTS CONTAINING ALUMINUM OR ANY OTHER PRODUCTS THAT REACT ADVERSELY WITH THE CONCRETE SHALL BE EMBEDDED IN THE CONCRETE.

10. A STATEMENT OF MIX DESIGN FOR ALL CONCRETE SHALL BE SUBMITTED AND APPROVED BY THE ENGINEER PRIOR TO COMMENCING WORK.

11. PLACEMENT, CURING, AND PROTECTION OF CONCRETE SHALL CONFORM TO ACI 318-19. THE USE OF CHEMICALS OR ADDITIVES TO PREVENT FREEZING SHALL NOT BE PERMITTED. REFER TO SPECIFICATIONS AND TO DIRECTIVES BY STRUCTURAL ENGINEER FOR ADDITIONAL COLD WEATHER REQUIREMENTS. ALL CONCRETE SHALL BE PROPERLY VIBRATED IN PLACE USING INTERNAL VIBRATING RODS (MECHANICAL OR ELECTRICAL).

12. ALL SLABS ON GRADE SHALL BE PLACED WITH CONTROL JOINTS OR SAW CUTS AT NO MORE THAN 30 TIMES THE SLAB THICKNESS ON CENTER (MAXIMUM) OR AS SHOWN/NOTED ON DRAWINGS. LENGTH TO WIDTH RATIO OF THE SLAB BETWEEN CONTROL JOINTS EACH WAY SHALL BE NO MORE THAN 1.25. COMPLETE CONTROL JOINTS WITHIN 12 HOURS OF CONCRETE PLACEMENT. TOOLED CONTROL JOINTS ARE TO BE AT MINIMUM 1/4 OF THE SLAB THICKNESS AND NO MORE THAN 1/3 OF THE SLAB THICKNESS. FOR SAW CUT CONTROL JOINTS, SEE THE TYPICAL SLAB ON GRADE JOINT DETAILS.

13. SLAB ON GRADE CONSTRUCTION JOINTS SHALL NOT EXCEED 125' - 0" O.C. IN ANY DIRECTION. CONSTRUCTION JOINTS MAY BE EITHER A DOWEL TYPE CONSTRUCTION JOINT OR A KEYWAY TYPE CONSTRUCTION JOINT. SEE THE SLAB JOINT TYPICAL DETAILS FOR MORE INFORMATION.

14. CONCRETE TESTS WILL BE MADE ON MAJOR POURS AND AT SUCH OTHER TIMES AS MAY BE REQUIRED BY THE ENGINEER. EACH TEST SHALL CONSIST OF (4) CYLINDERS OF WHICH ONE SHALL BE TESTED AT SEVEN DAYS, TWO TESTED AT TWENTY-EIGHT DAYS AND ONE RETAINED IN RESERVE FOR LATER TESTS, IF REQUIRED. IN GENERAL, ONE TEST SHALL BE MADE FOR EACH 150 CUBIC YARDS OF CONCRETE OR EVERY 5000 SQUARE FEET OF SURFACE AREA FOR SLABS OR WALLS ON EACH DAY'S POUR. SPECIMENS SHALL BE MADE AND TESTED IN ACCORDANCE WITH ASTM C31 & C39 STANDARDS. SLUMP AND AIR ENTRAINMENT TESTS SHALL ALSO BE MADE WITH EACH SET OF CYLINDERS TAKEN.

15. BEFORE CONCRETE IS POURED, CHECK WITH ALL TRADES TO INSURE PROPER PLACEMENT OF ALL OPENINGS, SLEEVES, CURBS, CONDUITS, BOLTS, INSERTS, ETC., RELATED TO THE WORK.

16. THE CONTRACTOR IS RESPONSIBLE FOR THE PLACEMENT, REMOVAL, AND DESIGN OF ALL FORMWORK AND SHORING.

17. SUSPENDED CONCRETE STRUCTURAL MEMBERS SHALL NOT BE STRIPPED OF FORMS UNTIL CONCRETE HAS REACHED ITS DESIGN STRENGTH.

18. FOR LAP SPLICE LENGTH, SEE CONCRETE REINFORCING LAP SPLICE LENGTH SCHEDULE.

19. SEE CIVIL DRAWINGS FOR SITE CONCRETE REQUIREMENTS.

MASONRY

1. MASONRY WORK SHALL CONFORM TO ALL REQUIREMENTS OF TMS 402-16 "BUILDING CODE FOR MASONRY STRUCTURES."

2. CONCRETE MASONRY UNITS SHALL CONFORM TO ASTM C90-14 "STANDARD SPECIFICATION FOR LOAD-BEARING CONCRETE MASONRY UNITS", AND SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (f'm) OF 2,000 PSI AND AN AVERAGE DENSITY BETWEEN 105 PCF AND 125 PCF (MEDIUM WEIGHT).

3. HOLLOW CLAY MASONRY UNITS SHALL CONFORM TO ASTM C652 "STANDARD SPECIFICATION FOR HOLLOW BRICK (HOLLOW MASONRY UNITS MAD OF CLAY OR SHALE)", TYPE HBX, WITH A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI.

4. MORTAR SHALL CONFORM TO ASTM C270-14a, "STANDARD SPECIFICATION FOR MORTAR FOR UNIT MASONRY". USE TYPE S MORTAR WITH A MINIMUM COMPRESSIVE STRENGTH OF 2,000 PSI. DO NOT USE ADMIXTURES CONTAINING MORE THAN 0.2 PERCENT CHLORIDE IONS.

5. GROUT SHALL CONFORM TO ASTM C476-18, "STANDARD SPECIFICATION FOR GROUT FOR MASONRY", AND SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF f'm PLUS 500 PSI (2,500 PSI MINIMUM). DETERMINE COMPRESSIVE STRENGTH OF GROUT IN ACCORDANCE WITH ASTM C1019. DO NOT USE ADMIXTURES UNLESS APPROVED BY ENGINEER OF RECORD. FIELD ADDITION OF ADMIXTURES IS NOT PERMITTED IN SELF-CONSOLIDATING GROUT. GROUT SHALL CONSIST OF 1 PART PORTLAND CEMENT, 3 PARTS SAND AND NOT MORE THAN 2 PARTS PEA GRAVEL. MIX GROUT (OTHER THAN SELF-CONSOLIDATING GROUT) TO A CONSISTENCY THAT HAS A SLUMP BETWEEN 8 AND 11 INCHES. MASONRY VIBRATORS SHALL BE USED IN ALL GROUTED CELLS, AND ALL CELLS SHALL BE VIBRATED TWICE.

6. MASONRY COMPRESSIVE STRENGTH VERIFICATION:
   A. MASONRY COMPRESSIVE STRENGTH, f'm SHALL BE VERIFIED USING THE "UNIT STRENGTH METHOD" PER SECTION 1.4 B.2.b OF TMS 602-16 AND AS DESCRIBED BELOW.
   B. PRIOR TO CONSTRUCTION, THE MASONRY UNITS SHALL BE TESTED FOR STRENGTH AND A LETTER OF CERTIFICATION FOR THE GROUT STRENGTH SHALL BE PROVIDED BY THE SUPPLIERS OF THE MASONRY UNITS.
   C. THE CONTRACTOR HAS THE OPTION OF USING THE "MASONRY PRISM TEST METHOD" PER SECTION 1.4 B.3 IN LIEU OF THE "UNIT STRENGTH METHOD."

7. MASONRY REINFORCING:
   A. LAP ALL REINFORCING AS SHOWN ON MASONRY REINFORCING LAP SPLICE LENGTH SCHEDULE.
   B. UNLESS NOTED OTHERWISE, TYPICAL REINFORCING SHALL BE #5 BARS @ 32"O.C. VERTICALLY, #5 BARS @ 48" O.C. HORIZONTALLY.
   C. ALL VERTICAL REINFORCING SHALL BE DOWELED INTO FOUNDATION WALL OR FOOTING BELOW. HORIZONTAL REINFORCING SHALL BE CONTINUOUS AT ALL INTERSECTING WALLS AND AT CORNERS.
   D. UNLESS OTHERWISE NOTED, ADDITIONAL VERTICAL BARS TO MATCH WALL REINFORCING SHALL BE PLACED AT JAMBS OF ALL OPENINGS, ENDS, AND INTERSECTIONS OF WALLS.
   E. HORIZONTAL BARS SHALL BE PLACED IN BOND BEAMS FILLED WITH GROUT AT THE TOP OF ALL WALLS, AT EACH FLOOR LEVEL, AND AT 48" O.C. MAXIMUM BETWEEN TOP OF WALL AND FOUNDATION. BOND BEAM UNITS SHALL CONTINUE UNINTERRUPTED AROUND ALL CORNERS AND WALL INTERSECTIONS.
   F. WHERE BOND BEAM REINFORCEMENT IS INTERRUPTED BY ADJACENT STEEL FRAMING, DOWELS MATCHING BOND BEAM REINFORCEMENT SHALL BE WELDED TO THE STEEL FRAMING FOR CONTINUITY.
   G. ALL REINFORCING SHALL BE IN PLACE PRIOR TO GROUTING. VERTICAL REINFORCING BARS SHALL BE HELD IN POSITION AT THE TOP, BOTTOM, AND AT INTERVALS NOT FARTHER APART THAN 200 BAR DIAMETERS.

8. NO MASONRY SHALL BE LAID WHEN THE TEMPERATURE OF THE OUTSIDE AIR IS BELOW 40 DEGREE F., UNLESS APPROVED METHODS ARE USED DURING CONSTRUCTION TO PREVENT DAMAGE TO THE MASONRY. SUCH METHODS SHALL INCLUDE PROTECTION OF THE MASONRY FOR A PERIOD OF AT LEAST 48 HOURS. SEE SECTION 1.8 C OF THE TMS 602-16 FOR OTHER CONSTRUCTION AND PROTECTION REQUIREMENTS.

9. UNLESS APPROVED OTHERWISE BY THE ENGINEER, LOW LIFT GROUTED CONSTRUCTION PRACTICE SHALL BE USED. UNITS MAY BE LAID TO A HEIGHT NOT EXCEEDING 8 FEET; HOWEVER, IF THE HEIGHT EXCEEDS 4 FEET, CLEANOUTS MUST BE USED. SUCH CLEANOUTS SHALL BE PROVIDED BY SUITABLE OPENING IN THE FACE SHELLS IN THE BOTTOM COURSE OF EACH REINFORCED CELL.

10. ALL ANCHOR BOLTS AND REINFORCING STEEL MUST BE PLACED IN GROUTED CELLS.

11. STOP GROUT POUR 2" BELOW TOP OF BLOCK UNITS BETWEEN EACH GROUT LIFT.

12. UNLESS OTHERWISE SPECIFIED ON THE DRAWINGS, ONLY CELLS WITH REINFORCING SHALL BE GROUTED SOLID. ADDITIONALLY, ALL STEEL JOIST AND BEAM POCKETS SHALL BE GROUTED SOLID AND ALL MASONRY BELOW GRADE SHALL BE GROUTED SOLID. CELLS SHALL BE ALIGNED TO PRESERVE UNOBSTRUCTED VERTICAL CAVITIES OF 2" x 3" MINIMUM.

13. UNLESS NOTED OTHERWISE, MASONRY WALLS SHALL BE CONSTRUCTED UTILIZING COMMON RUNNING-BOND WITH FULLY MORTARED BED JOINTS.

14. UNLESS OTHERWISE NOTED ON THE PLANS, PLACE CONTROL JOINTS IN MASONRY WALLS SUCH THAT NO STRAIGHT RUN OF WALL EXCEEDS THE LESSER OF THE LENGTH TO HEIGHT RATIO OF 1.5 TO 1 OR 40'-0".

15. ALL UNITS SHALL BE LAID IN RUNNING BOND UNLESS NOTED OTHERWISE. VERTICAL ALIGNMENT OF CELLS SHALL MAINTAIN A CONTINUOUS CLEAR, UNOBSTRUCTED CELL NOT LESS THAN 3 INCHES SQUARE. MINIMUM DEPTH OF HORIZONTAL BOND BEAM CHANNEL BELOW TOP OF UNIT SHALL BE 1-1/2 INCHES, AND CHANNEL SHALL BE 3 INCHES WIDE MINIMUM. ALL UNITS SHALL BE FREE OF DUST AND DIRT AT THE TIME OF LAYING.

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COBABE RANCH AND EDEN CROSSING WELL HOUSE AND BOOSTER STATION

(PWS. NO. 29132)
EDEN, UTAH

PROFESSIONAL STRUCTURAL ENGINEER
7-22-2025
No. 9062337
CODY J. SANTOS
STATE OF UTAH

PERMIT 07/23/2025

NO.	DATE	REVISION

GENERAL STRUCTURAL NOTES

PROJECT NUMBER	DATE
14018B	07-22-2025
PROJECT MANAGER	DESIGNED BY
CJS	RM

S001

WOOD

1. ALL STRUCTURAL WOOD SHALL CONFORM WITH STANDARDS OUTLINED IN THE LATEST EDITION OF THE ANSI "NATIONAL DESIGN SPECIFICATION (NDS) FOR WOOD CONSTRUCTION", THE ANSI "NDS SUPPLEMENT, DESIGN VALUES FOR WOOD CONSTRUCTION", THE ANSI "SPECIAL DESIGN PROVISIONS FOR WIND & SEISMIC (SDPWS)", AND ASTM STANDARDS.

2. STRUCTURAL WOOD MATERIALS SHALL CONFORM TO THE FOLLOWING UNLESS NOTED OTHERWISE:
   - A. WALL STUDS, SOLE PLATES, TOP PLATES = DOUGLAS FIR-LARCH (NORTH) No. 2 OR BETTER
   - B. BLOCKING, BRIDGING = DOUGLAS FIR-LARCH (NORTH) No. 2 OR BETTER
   - C. SILL PLATES = PRESSURE-TREATED DOUGLAS FIR-LARCH (NORTH) No. 2 OR BETTER
   - D. DIMENSIONAL LUMBER (BUILT-UP POSTS & BEAMS) = DOUGLAS FIR-LARCH (NORTH) No. 2 OR BETTER
   - E. SOLID SAWN LUMBER (SOLID POSTS & BEAMS) = DOUGLAS FIR-LARCH (NORTH) No. 1 OR BETTER
   - F. ENGINEERED LUMBER
     - a. BUILT-UP BEAMS = 2.0E MICROLLAM LVL
     - b. SOLID POSTS
       - MAXIMUM DIMENSION ≤ 7" = 1.8E PARALLAM PSL
       - MAXIMUM DIMENSION > 7" = 2.0E PARALLAM PSL
     - c. GLUED LAMINATED TIMBER:
       - SINGLE SPAN BEAMS = 24F-V4 DF/DF
       - CONTINUOUS OR CANTILEVERED BEAMS = 24F-V8 DF/DF
   - G. SHEATHING PANELS (WALLS, FLOOR, ROOF) = SEE BELOW

3. INSTALL BRIDGING ON ALL SOLID-SAWN RECTANGULAR LUMBER MEMBERS PER SECTION 2308.4.6 OF THE 2021 IBC.

4. ALL POSTS SHALL MAINTAIN A CONTINUOUS LOAD PATH DOWN TO THE FOUNDATION. SQUASH BLOCKS (SIZE & GRADE OF SQUASH BLOCK TO MATCH POST IN LEVEL BELOW) ARE REQUIRED IN STACK FRAMED CONSTRUCTION.

5. ALL EXTERIOR WOOD WALLS SHALL BE INSTALLED AS SHEAR WALL TYPE SW-1 UNLESS NOTED OTHERWISE ON THE DRAWINGS.

6. FRAMING CONNECTORS:
   - A. ALL SPECIFIED HARDWARE IS SIMPSON STRONG-TIE. ALL HARDWARE SUBSTITUTION REQUESTS SHALL BE SUBMITTED TO THE ENGINEER OF RECORD FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION.
   - B. INSTALL ALL HARDWARE PER MANUFACTURER'S SPECIFICATIONS.
   - C. ALL MEMBERS FRAMING INTO SIDE OF BEAMS OR FACE OF WALLS SHALL BE ATTACHED USING METAL JOIST HANGERS.

7. FASTENERS:
   - A. ALL NAILING OF FRAMING LUMBER AND PLYWOOD SHALL CONFORM TO THE STANDARDS OUTLINED IN TABLE 2304.10.2 OF THE 2021 IBC UNLESS NOTED OTHERWISE.
   - B. ALL BOLTS FOR CONNECTIONS SHALL HAVE WASHERS PLACED UNDER NUTS AND HEADS. BOLT HOLES SHALL BE DRILLED 1/16" LARGER THAN BOLT DIAMETERS.
   - C. ALL FASTENERS, INCLUDING NUTS AND WASHERS INSTALLED IN PRESERVATIVE-TREATED WOOD OR FIRE-TREATED WOOD SHALL BE HOT-DIPPED ZINC-COATED GALVANIZED STEEL, STAINLESS STEEL, SILICONE BRONZE, OR COPPER. THESE FASTENERS SHALL MEET THE REQUIREMENTS OF SECTION 2304.10.6 OF THE 2021 IBC.
     - a. EXCEPTION: PLAIN CARBON STEEL FASTENERS, INCLUDING NUTS AND WASHERS IN SBX/DOT AND ZINC BORATE PRESERVATIVE-TREATED WOOD IN AN INTERIOR, DRY ENVIRONMENT ARE PERMITTED PER SECTION 2304.10.6.1 OF THE 2021 IBC.

8. WOOD STRUCTURAL PANEL SHEATHING:
   - A. ALL WOOD STRUCTURAL PANELS SHALL BE APA RATED AND SHALL BE IDENTIFIED WITH THE APPROPRIATE APA TRADEMARK.
   - B. ALL WOOD STRUCTURAL PANELS SHALL MEET THE REQUIREMENTS OF THE LATEST EDITION OF VOLUNTARY PRODUCT STANDARD PS 1, VOLUNTARY PRODUCT STANDARD PS 2, OR APA PRP-108 PERFORMANCE STANDARDS.
   - C. PANEL THICKNESS, GRADE, AND GROUP NUMBER OR SPAN INDEX RATING SHALL BE AT LEAST EQUAL TO THAT SHOWN ON THE DRAWINGS.
   - D. APPLICATIONS SHALL BE IN ACCORDANCE WITH THE RECOMMENDATIONS OF APA.

9. STRUCTURAL GLUED LAMINATED TIMBER:
   - A. STRUCTURAL GLUED LAMINATED TIMBER OF SOFTWOOD SPECIES SHALL BE IN CONFORMANCE WITH ANSI STANDARD A190.1, AMERICAN NATIONAL STANDARD FOR STRUCTURAL GLUED LAMINATED TIMBER, OR OTHER CODE-APPROVED DESIGN, MANUFACTURING AND/OR QUALITY ASSURANCE PROCEDURES.
   - B. ALL MEMBERS SHALL BE MARKED WITH THE ENGINEERED WOOD SYSTEMS APA EWS TRADEMARK INDICATING CONFORMANCE WITH THE MANUFACTURING, QUALITY ASSURANCE, AND MARKING PROVISIONS OF ANSI STANDARD A190.1.

10. ENGINEERED WOOD I-JOISTS:
    - A. I-JOISTS SHALL BE MARKED WITH THE APA PRI TRADEMARK INDICATING CONFORMANCE WITH THE MANUFACTURING QUALITY ASSURANCE, AND MARKING PROVISIONS OF APA EWS STANDARD PRI-400, AND PERFORMANCE STANDARD FOR APA EWS I-JOISTS.
    - B. APPROVED EQUIVALENT I-JOISTS PRODUCED BY MANUFACTURERS OTHER THAN AS NOTED ON DRAWINGS MAY ALSO BE USED.

11. PRE-ENGINEERED OPEN-WEB WOOD TRUSSES:
    - A. THIS WORK INCLUDES THE COMPLETE FURNISHINGS AND INSTALLATION OF PRE-ENGINEERED OPEN-WEB WOOD TRUSSES.
    - B. PRODUCTS SHALL BE CUSTOM DESIGNED TO FIT THE DIMENSIONS AND LOADS INDICATED ON THE PLANS. TRUSS DESIGN LOADS INCLUDE (BUT ARE NOT LIMITED TO) GRAVITY, LATERAL, AND OUT-OF-PLANE LOADS. A COMPLETE SET OF DESIGN CALCULATIONS SHALL BE PREPARED UNDER THE SUPERVISION OF A REGISTERED PROFESSIONAL ENGINEER.
    - C. SHOP DRAWINGS SHALL BE SUBMITTED SHOWING LAYOUT AND DETAILS NECESSARY FOR PROPER PRODUCT PLACEMENT IN THE BUILDING. DO NOT PROCEED WITH FABRICATION AND/OR CUTTING UNTIL SHOP DRAWINGS AND DESIGN CALCULATIONS HAVE BEEN REVIEWED BY THE ENGINEER OF RECORD.
    - D. MATERIAL PROPERTIES:
      - a. TOP AND BOTTOM CHORDS SHALL BE CONTINUOUS LENGTH FINGER-JOINTED MACHINE STRESS RATED (MSR) LUMBER PROOF LOADED PER ANSI A190.1.
      - b. WEBS SHALL BE MANUFACTURED FROM VISUALLY GRADED OR MSR LUMBER.
      - c. MOISTURE CONTENT FOR ALL LUMBER AT TIME OF MANUFACTURE SHALL NOT EXCEED 15%.
      - d. ALL MULTIPLE LUMBER PLIES SHALL BE FACE-BONDED (GLUED) IN ACCORDANCE WITH ANSI A190.1.
    - E. ALL TRUSSES SHALL BE MANUFACTURED WITH QUALITY AUDITS PERFORMED BY A THIRD-PARTY INSPECTION AGENCY.
    - F. EACH TRUSS SHALL BE IDENTIFIED BY A STAMP INDICATING THE MANUFACTURER'S NAME, PLANT LOCATION, AND THE INDEPENDENT INSPECTION AGENCY'S LOGO AND EVALUATION REPORT NUMBER.
    - G. IF OPEN-WEB TRUSSES ARE STORED PRIOR TO ERECTION, SHALL BE STORED IN A VERTICAL POSITION AND PROTECTED FROM THE WEATHER.
    - H. HANDLE TRUSSES WITH CARE SO THEY ARE NOT DAMAGED.
    - I. TRUSSES SHALL BE ERECTED AND INSTALLED IN ACCORDANCE WITH THE STRUCTURAL DRAWINGS AND ANY MANUFACTURER'S DRAWINGS / INSTALLATION SUGGESTIONS THAT ARE PROVIDED.
    - J. TEMPORARY CONSTRUCTION LOADS THAT CAUSE STRESSES BEYOND DESIGN LIMITS ARE NOT PERMITTED.
    - K. ERECTION BRACING SHALL BE PROVIDED TO KEEP TRUSSES STRAIGHT PLUMB AS REQUIRED AND TO ASSURE ADEQUATE LATERAL SUPPORT FOR THE INDIVIDUAL TRUSSES AND THE ENTIRE SYSTEM UNTIL THE SHEATHING MATERIAL HAS BEEN INSTALLED.
    - L. APPARENT DAMAGE TO TRUSSES, IF ANY, SHALL BE REVIEWED AND APPROVED BY THE MANUFACTURER PRIOR TO INSTALLATION.
    - M. CUTTING OR ALTERING THE TRUSSES IS NOT PERMITTED.
    - N. COMPRESSION WEB MEMBERS SHALL BE BRACED AS REQUIRED BY THE TRUSS MANUFACTURER ACCORDING TO THE TRUSS MANUFACTURERS DETAILS.
    - O. THE TRUSSES SHALL BE FREE FROM MANUFACTURING ERRORS OR DEFECTS IN WORKMANSHIP AND MATERIAL.

STRUCTURAL ABBREVIATIONS

AB.	ANCHOR BOLT(S)	IN.	INCH
ABV.	ABOVE	INSUL.	INSULATION
ADD.	ADDITION (AL)	INT.	INTERIOR
@	AT	I.F.	INSIDE FACE
ALT.	ALTERNATE		
APPROX.	APPROXIMATE	JT.	JOINT
ARCH.	ARCHITECT (URAL)	JST.	JOIST
BM.	BEAM	KLF	KIPS PER LINEAL FOOT
BLK'G.	BLOCKING	KSF	KIPS PER SQUARE FOOT
BLW.	BELOW	KSI	KIPS PER SQUARE INCH
BPL.	BASE PLATE	K	KIPS
BRG.	BEARING		
BTWN.	BETWEEN	LF.	LINEAL FOOT
BLDG.	BUILDING	LBS	POUNDS
BOT.	BOTTOM	LLH	LONG LEG HORIZONTAL
		LLV	LONG LEG VERTICAL
CFS	COLD-FORMED STEEL		
C.J.	CONSTRUCTION JOINT OR CONTROL JOINT	MAS.	MASONRY
		MAX.	MAXIMUM
CJP.	COMPLETE JOINT PENETRATION	MCJ.	MASONRY CONTROL JOINT
CMU	CONCRETE MASONRY UNIT	MECH.	MECHANICAL
COL.	COLUMN	MFR.	MANUFACTURER
CONC.	CONCRETE	MIN.	MINIMUM
CONST.	CONSTRUCTION	MISC.	MISCELLANEOUS
CONT.	CONTINUOUS		
CTR.	CENTER	N.I.C.	NOT IN CONTRACT
		N.T.S.	NOT TO SCALE
DB.	DECK BEARING		
DBA	DEFORMED BAR ANCHORS	OPN'G.	OPENING
DBL.	DOUBLE	OPP.	OPPOSITE
DET.	DETAIL	O.C.	ON CENTER
DF	DOUGLAS FIR-LARCH	O.F.	OUTSIDE FACE
DIA.	DIAMETER	OWSJ.	OPEN WEB STEEL JOIST
DIM.	DIMENSION		
DWG.	DRAWING	PAF	POWDER ACTUATED FASTENER
DWL.	DOWEL	PCF	POUNDS PER CUBIC FOOT
		PEMB	PRE-ENGINEERED METAL BUILDING
EA.	EACH	PL.	PLATE
E.J.	EXPANSION JOINT (SEISMIC SEPARATION JOINT)	PNL	PANEL
		PSF	POUNDS PER SQUARE FOOT
ELEV.	ELEVATION	PSI	POUNDS PER SQUARE INCH
ELEC.	ELECTRICAL	PT	POST-TENSIONED
EQUIP.	EQUIPMENT		
EQ.	EQUAL	REINF.	REINFORCING
EXIST.	EXISTING	RBS	REDUCED BASE STUD
EXP.	EXPANSION / EXPOSED	R.D.	ROOF DRAIN
EXT.	EXTERIOR	REQ'D.	REQUIRED
E.F.	EACH FACE		
E.W.	EACH WAY	SHT.	SHEET
		SHT'G.	SHEATHING
F.D.	FLOOR DRAIN	SI	SPECIAL INSPECTION
FDTN.	FOUNDATION	S.O.G.	SLAB ON GRADE
F.F.	FINISH FLOOR	STD.	STANDARD
FIN.	FINISH	STIFF.	STIFFENER
FL.	FLOOR	STL.	STEEL
FT.	FOOT	SQ.	SQUARE
FTG.	FOOTING	SIM.	SIMILAR
FV.	FIELD VERIFY	STRC.	STRUCTURAL
		STAG.	STAGGERED
GA.	GAUGE		
GALV.	GALVANIZED	T&B	TOP AND BOTTOM
GFRC	GLASS FIBER REINFORCED CONCRETE	TEMP.	TEMPORARY
GLB.	GLU-LAMINATED BEAM	T.O.	TOP OF
GR.	GRADE	TOC	TOP OF CONCRETE
GSN	GENERAL STRUCTURAL NOTES	TOF	TOP OF FOOTING
		TOS	TOP OF SLAB
HB.	HORIZONTAL BRIDGING	TOW	TOP OF WALL
HT.	HEIGHT	TYP.	TYPICAL
HORIZ.	HORIZONTAL		
HSA	HEADED STUD ANCHORS	U.N.O.	UNLESS NOTED OTHERWISE
		VERT.	VERTICAL
IBC	INTERNATIONAL BUILDING CODE	w/	WITH
ICBO	INTERNATIONAL CONFERENCE OF BUILDING OFFICIALS	WWF	WELD WIRE FABRIC
		WWM	WELD WIRE MESH
		WT.	WEIGHT
		WP	WOOD POST

SYMBOLS & MARKS LEGEND

- CONTINUOUS CONCRETE FOOTING
- SPOT / MAT CONCRETE FOOTING
- FOOTING STEP
- STEP IN TOP OF CONCRETE
- BLOCK OUT AT COLUMN
- HAIRPIN TENSION BAR
- TIE ROD
- CONCRETE WALL
- CONCRETE WALL BLOCK OUT
- CONCRETE COLUMN IN WALL
- BEAM IN WALL BELOW
- MASONRY WALL
- MASONRY COLUMN IN WALL
- BEAM IN WALL BELOW
- WOOD SHEAR WALL
- WOOD POST IN WALL
- BEAM IN WALL BELOW
- WOOD WALL (NON-SHEAR WALL)
- COLD-FORMED STEEL WALL
- BEAM IN WALL BELOW
- WALL THAT STOPS AT BOTTOM OF FLOOR OR ROOF (FLOOR OR ROOF STRUCTURE BEARS ON WALL)
- BEAM IN WALL THAT STOPS AT BOTTOM OF FLOOR OR ROOF
- CONCRETE OR MASONRY BEAM (NOT WITHIN A WALL) AT OR BELOW FLOOR OR ROOF
- NON-STRUCTURAL WALL THAT STOPS BELOW BOTTOM OF FLOOR OR ROOF (AIR GAP OCCURS BETWEEN WALL AND FLOOR OR ROOF STRUCTURE)
- COLUMN THAT STOPS AT BOTTOM OF FLOOR OR ROOF
- COLUMN THAT EITHER STARTS AT OR CONTINUES THROUGH FLOOR OR ROOF STRUCTURE
- WOOD POST (SOLID OR BUILT-UP)
- HSS TUBE STEEL COLUMN
- WIDE FLANGE STEEL COLUMN
- PIPE/ROUND HSS STEEL COLUMN
- CONCRETE OR MASONRY COLUMN

STEEL COLUMN TAG:
- STEEL COLUMN MARK
- STEEL COLUMN CAP PLATE MARK
- STEEL COLUMN BASE PLATE MARK

STEEL BEAM TAG:
- BEAM SIZE
- HSA QUANTITY ON BEAM
- PRE-CAMBER AT MID-SPAN OF BEAM

SIZE (##) C=##"

- MOMENT CONNECTION (SFRS)
- MOMENT CONNECTION (GRAVITY)
- COLLECTOR CONNECTION IDENTIFICATION (SFRS)
- BEAM SPLICE
- BRACED FRAME ELEMENT
- KICKER BRACE
- MFB — MOMENT FRAME BEAM
- MFC — MOMENT FRAME COLUMN
- SFRS — INDICATES MEMBER IS PART OF SEISMIC FORCE RESISTING SYSTEM

- OPENING
- CONCRETE SUSPENDED SLAB, SEE KEYED NOTES FOR REQUIREMENTS
- SLAB REINFORCING, SEE PLAN OR KEYED NOTES FOR ADDITIONAL REQUIREMENTS
- CONCRETE OVER STEEL DECK, SEE PLAN FOR ORIENTATION, AND GSN & SCHEDULE FOR REQUIREMENTS
- STEEL DECK, SEE PLAN FOR ORIENTATION, AND GSN & SCHEDULE FOR REQUIREMENTS
- HORIZONTAL BRIDGING
- CROSS BRIDGING
- WOOD SHEATHING (FLOOR OR ROOF), SEE PLAN FOR ORIENTATION & REQUIREMENTS
- STRAPPING
- SNOW DRIFT, SEE SCHEDULE
- XX'-XX" — ELEVATION
- INDICATES SPAN DIRECTION OF CONCRETE ELEMENTS
- EXTENT OF CONDITION SPECIFIED
- CONTINUATION OF CONDITION SPECIFIED
- ## — DETAIL #
- S### — SHEET #
- X — KEYED NOTE

AB#	ANCHOR BOLT
AT-#	ANCHOR TIE DOWN SYSTEM
B-#	STEEL COLUMN BASE PLATE
BRGPL-#	STEEL BEARING PLATE
C-#	STEEL COLUMN CAP PLATE
CB-#	CONCRETE BEAM
CC-#	CONCRETE COLUMN
CFSB-#	COLD-FORMED STEEL BEAM
CP-#	CONCRETE PEDESTAL
CTW-#	CONCRETE TILT WALL
CW-#	CONCRETE WALL
FC#	CONTINUOUS FOOTING
FS#	SPOT FOOTING
FTAO-#	FORCE TRANSFER AROUND OPENING
GB-#	GRADE BEAM
H-#	HOLDOWN
HCMC-#	HOLLOW CLAY MASONRY COLUMN
HCML-#	HOLLOW CLAY MASONRY LINTEL
HCMW-#	HOLLOW CLAY MASONRY WALL
HP-#	HAIRPIN TENSION BAR
L-#	STEEL LEDGER
MC-#	MASONRY COLUMN
ML-#	MASONRY LINTEL
MW-#	MASONRY WALL
RW-#	RETAINING WALL
SC-#	STEEL COLUMN
SD-#	STEEL DECK
SW-#	WOOD SHEAR WALL
T-#	FLOOR-TO-FLOOR TIE
WB-#	WOOD BEAM
WL-#	WOOD LEDGER
WP-#	WOOD POST
WW-#	WOOD WALL

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COBABE RANCH AND EDEN CROSSING WELL HOUSE AND BOOSTER STATION

(PWS. NO. 29132)
EDEN, UTAH

PROFESSIONAL STRUCTURAL ENGINEER
7-22-2025
No. 9062337
CODY J. SANTOS
STATE OF UTAH

PERMIT 07/23/2025

NO.	DATE	REVISION

GENERAL STRUCTURAL NOTES

PROJECT NUMBER	DATE
14018B	07-22-2025
PROJECT MANAGER	DESIGNED BY
CJS	RM

S002

SPECIAL INSPECTION

SPECIAL INSPECTIONS:

1. SPECIAL INSPECTIONS ARE REQUIRED AS DESCRIBED IN CHAPTER 17 OF THE 2021 IBC. THE OWNER OR OWNER'S AGENT, OTHER THAN THE CONTRACTOR, SHALL EMPLOY ONE OR MORE APPROVED AGENCIES TO PROVIDE SPECIAL INSPECTIONS AND TESTS DURING CONSTRUCTION ON THE TYPES OF WORK SPECIFIED IN SECTION 1705 AND IDENTIFY THE APPROVED AGENCIES TO THE BUILDING OFFICIAL. THESE SPECIAL INSPECTIONS AND TESTS ARE IN ADDITION TO THE INSPECTIONS BY THE BUILDING OFFICIAL THAT ARE IDENTIFIED IN SECTION 110.

2. THE SPECIAL INSPECTION REQUIREMENTS OF THIS SECTION OF THE GENERAL STRUCTURAL NOTES SERVE AS THE ENGINEER OF RECORD'S STATEMENT OF SPECIAL INSPECTIONS REQUIRED BY CHAPTER 17 OF THE 2021 IBC.

SPECIAL INSPECTOR QUALIFICATIONS & RESPONSIBILITIES:

1. PRIOR TO THE START OF CONSTRUCTION, THE APPROVED AGENCIES SHALL PROVIDE WRITTEN DOCUMENTATION TO THE BUILDING OFFICIAL DEMONSTRATING THE COMPETENCE AND RELEVANT EXPERIENCE OR TRAINING OF THE SPECIAL INSPECTORS WHO WILL PERFORM THE SPECIAL INSPECTIONS AND TESTS DURING CONSTRUCTION.

2. APPROVED AGENCIES SHALL KEEP RECORDS OF ALL SPECIAL INSPECTIONS AND TESTS. THE APPROVED AGENCY SHALL SUBMIT REPORTS OF SPECIAL INSPECTIONS AND TEST TO THE BUILDING OFFICIAL AND TO THE ARCHITECT / ENGINEER OF RECORD.
   A. REPORTS SHALL INDICATE THAT WORK INSPECTED OR TESTED WAS OR WAS NOT COMPLETED IN CONFORMANCE TO THE APPROVED CONSTRUCTION DOCUMENTS.
   B. ANY DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION.
   C. ANY DISCREPANCIES THAT ARE NOT CORRECTED SHALL BE BROUGHT TO THE ATTENTION OF THE BUILDING OFFICIAL AND THE ARCHITECT/ENGINEER OF RECORD PRIOR TO COMPLETION OF THAT PHASE OF WORK.
   D. THE INSPECTOR SHALL KEEP A MARKED-UP SET OF DRAWINGS SHOWING THE EXTENT AND TIME OF ALL INSPECTIONS AND TESTING.
   E. A FINAL SIGNED REPORT DOCUMENTING ALL REQUIRED SPECIAL INSPECTIONS AND CORRECTION OF ANY DISCREPANCIES NOTED IN THE INSPECTIONS SHALL BE SUBMITTED TO THE BUILDING OFFICIAL AND ARCHITECT/ENGINEER OF RECORD AT A POINT IN TIME AGREED UPON PRIOR TO THE START OF WORK BY THE OWNER OR OWNER'S AGENT. THE REPORT SHALL INCLUDE THE MARKED-UP SET OF DRAWINGS OUTLINED ABOVE.

CONTRACTOR RESPONSIBILITIES:

1. EACH CONTRACTOR RESPONSIBLE FOR THE CONSTRUCTION OF A MAIN WIND/SEISMIC FORCE RESISTING SYSTEM, DESIGNATED WIND/SEISMIC SYSTEM, OR A WIND/SEISMIC FORCE RESISTING COMPONENT SHALL SUBMIT A WRITTEN STATEMENT OF RESPONSIBILITY TO THE BUILDING OFFICIAL AND THE OWNER PRIOR TO THE COMMENCEMENT OF WORK ON THAT SYSTEM OR COMPONENT. THIS STATEMENT SHALL CONTAIN ACKNOWLEDGEMENT OF AWARENESS OF THE SPECIAL INSPECTION REQUIREMENTS.

2. THE CONTRACTOR SHALL COORDINATE AND COOPERATE WITH ALL REQUIRED INSPECTIONS, TESTING AND STRUCTURAL OBSERVATIONS. THE CONTRACTOR SHALL NOT PROCEED WITH SUBSEQUENT WORK UNTIL REQUIRED INSPECTIONS, TESTING AND STRUCTURAL OBSERVATIONS HAVE BEEN COMPLETED.

3. ALL WORK REQUIRING SPECIAL INSPECTION SHALL REMAIN ACCESSIBLE AND EXPOSED UNTIL COMPLETION OF THE REQUIRED SPECIAL INSPECTIONS.

4. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF RECORD AT LEAST (2) DAYS PRIOR TO ANY REQUIRED STRUCTURAL OBSERVATIONS.

SPECIAL INSPECTION OF FABRICATED ITEMS:

1. ALL FABRICATION OF STRUCTURAL, LOAD-BEARING OR LATERAL LOAD-RESISTING MEMBERS OR ASSEMBLIES PERFORMED OFFSITE SHALL BE SPECIAL INSPECTED PER SECTION 1704.2.5.

2. WHERE THE FABRICATOR IS REGISTERED AND APPROVED IN ACCORDANCE WITH SECTION 1704.2.5.1, THEY SHALL SUBMIT A CERTIFICATE OF COMPLIANCE TO THE OWNER OR THE OWNER'S AGENT FOR SUBMITTAL TO THE BUILDING OFFICIAL AT THE COMPLETION OF FABRICATION STATING THE WORK WAS PERFORMED IN ACCORDANCE WITH THE APPROVED CONSTRUCTION DOCUMENTS.

SUBMITTALS TO THE BUILDING OFFICIAL:

1. IN ADDITION TO THE SUBMITTAL OF REPORTS OF SPECIAL INSPECTIONS AND TESTS IN ACCORDANCE WITH SECTION 1704.2.4, REPORTS AND CERTIFICATES SHALL BE SUBMITTED BY THE OWNER OR OWNER'S AGENT TO THE BUILDING OFFICIAL FOR EACH OF THE FOLLOWING:
   A. CERTIFICATES OF COMPLIANCE FOR APPROVED FABRICATORS.
   B. CERTIFICATES OF COMPLIANCE FOR SEISMIC QUALIFICATIONS OF NON-STRUCTURAL COMPONENTS, SUPPORTS, AND ATTACHMENTS.
   C. CERTIFICATES OF COMPLIANCE FOR DESIGNATED SEISMIC SYSTEMS.
   D. REPORTS OF PRE-CONSTRUCTION TESTS FOR SHOTCRETE.
   E. CERTIFICATES OF COMPLIANCE FOR OPEN-WEB STEEL JOISTS AND JOIST GIRDERS.
   F. REPORTS OF MATERIAL COMPLIANCE FOR WELDABILITY OF REINFORCING BARS IN CONCRETE.
   G. REPORTS OF MILL TESTS FOR REINFORCING BARS USED IN SPECIAL CONCRETE MOMENT FRAMES, SPECIAL STRUCTURAL WALLS OR COUPLING BEAMS.

STRUCTURAL OBSERVATIONS:

1. ***STRUCTURAL OBSERVATIONS ARE REQUIRED PER SECTION 1704.6.1 OF THE 2021 IBC. STRUCTURAL OBSERVATIONS SHALL BE PERFORMED BY A REPRESENTATIVE FROM ENSIGN ENGINEERING AS REQUIRED FOR CRITICAL PHASES OF CONSTRUCTION. THE STRUCTURAL OBSERVER SHALL VISUALLY OBSERVE REPRESENTATIVE LOCATIONS OF STRUCTURAL SYSTEMS, DETAILS, AND LOAD PATHS FOR GENERAL CONFORMANCE TO THE APPROVED CONSTRUCTION DOCUMENTS. THIS INCLUDES, BUT IS NOT LIMITED TO, MAT FOUNDATIONS, FOOTINGS, FOUNDATION WALLS AND PIERS, MASONRY SHEAR WALLS, CONCRETE SHEAR WALLS, MOMENT FRAMES, BRACED FRAMES, AND STEEL ROOF/FLOOR DECKING.***

2. ***COPIES OF THE STRUCTURAL OBSERVATION REPORT WILL BE DISTRIBUTED TO THE OWNER, ARCHITECT, CONTRACTOR AND BUILDING OFFICIAL.***

3. ***STRUCTURAL OBSERVATION DOES NOT INCLUDE OR WAIVE THE SPECIAL INSPECTIONS REQUIRED BY THE 2021 IBC AND SHALL NOT BE CONSTRUED AS APPROVAL OF CONSTRUCTION.***

REQUIRED SPECIAL INSPECTION OR TESTING:

THE FOLLOWING MATERIALS, SYSTEMS AND COMPONENTS REQUIRE SPECIAL INSPECTION OR TESTING PER CHAPTER 17 OF THE 2021 IBC:

1. SPECIAL CASES (SECTION 1705.1.1)
   A. SPECIAL INSPECTION AND TESTING SHALL BE PROVIDED FOR POST INSTALLED ANCHORS PER THE ICC OR IAPMO REPORT.

SPECIAL INSPECTION (CONTINUED)

REQUIRED SPECIAL INSPECTION OR TESTING (CONTINUED):

4. CONCRETE CONSTRUCTION (SECTION 1705.3):
   A. SPECIAL INSPECTION AND TESTS FOR CONCRETE CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CONCRETE CONSTRUCTION SPECIAL INSPECTION TABLE AND SECTION 1705.3 OF THE 2021 IBC.
   B. SEE TABLE 1705.3 OF THE 2021 IBC FOR APPLICABLE REFERENCE STANDARDS.
   C. WELDING OF REINFORCING BARS: SPECIAL INSPECTION OF WELDING AND QUALIFICATIONS OF SPECIAL INSPECTORS FOR REINFORCING BARS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF AWS D1.4 FOR SPECIAL INSPECTION AND FOR SPECIAL INSPECTOR QUALIFICATIONS.
   D. IN THE ABSENCE OF SUFFICIENT DATA OR DOCUMENTATION PROVIDING EVIDENCE OF CONFORMANCE TO QUALITY STANDARDS FOR MATERIAL IN CHAPTERS 19 AND 20 OF ACI 318, THE BUILDING OFFICIAL SHALL REQUIRE TESTING OF MATERIALS IN ACCORDANCE WITH THE APPROPRIATE STANDARDS AND CRITERIA FOR THE MATERIAL IN CHAPTERS 19 AND 20 OF ACI 318.

5. MASONRY CONSTRUCTION (SECTION 1705.4):
   A. THE QUALITY ASSURANCE PROGRAM SHALL BE IN ACCORDANCE WITH THE MASONRY CONSTRUCTION SPECIAL INSPECTION TABLE.

6. WOOD CONSTRUCTION (SECTION 1705.5):
   A. SPECIAL INSPECTIONS OF THE PREFABRICATED WOOD STRUCTURAL ELEMENTS AND ASSEMBLIES SHALL BE IN ACCORDANCE WITH SECTION 1704.2.5 OF THE 2021 IBC AND THE SPECIAL INSPECTION OF FABRICATORS SECTION OF THE SPECIAL INSPECTION GENERAL STRUCTURAL NOTES.
   B. SPECIAL INSPECTIONS OF SITE-BUILT ASSEMBLIES SHALL BE IN ACCORDANCE WITH THE WOOD CONSTRUCTION SPECIAL INSPECTION TABLE AND THE FOLLOWING:
      a. METAL-PLATE-CONNECTED WOOD TRUSS SPANNING 60 FEET OR GREATER: WHERE A TRUSS CLEAR SPAN IS 60 FEET OR GREATER, THE SPECIAL INSPECTOR SHALL VERIFY THAT THE TEMPORARY INSTALLATION RESTRAINT/ BRACING AND THE PERMANENT INDIVIDUAL TRUSS MEMBER RESTRAINT/BRACING ARE INSTALLED IN ACCORDANCE WITH THE APPROVED TRUSS SUBMITTAL PACKAGE.

7. SOILS (SECTION 1705.6):
   A. SPECIAL INSPECTIONS AND TESTS OF EXISTING SITE SOIL CONDITIONS, FILL PLACEMENT AND LOAD-BEARING REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE SOILS SPECIAL INSPECTION TABLE AND THE FOLLOWING:
      a. THE APPROVED GEOTECHNICAL REPORT AND APPROVED CONSTRUCTION DOCUMENTS SHALL BE USED TO DETERMINE COMPLIANCE.
      b. DURING FILL PLACEMENT, THE SPECIAL INSPECTOR SHALL DETERMINE THAT PROPER MATERIALS AND PROCEDURES ARE USED IN ACCORDANCE WITH THE PROVISIONS OF THE APPROVED GEOTECHNICAL REPORT.
      c. WHERE A GEOTECHNICAL REPORT IS NOT PROVIDED, THE SPECIAL INSPECTOR SHALL VERIFY THAT THE IN-PLACE DRY DENSITY OF THE COMPACTED FILL IS NOT LESS THAN 90 PERCENT OF THE MAXIMUM DRY DENSITY AT OPTIMUM MOISTURE CONTENT DETERMINED IN ACCORDANCE WITH ASTM D 1557.

8. SPECIAL INSPECTION FOR WIND-RESISTANCE (SECTION 1705.12):
   A. PERIODIC SPECIAL INSPECTION IS REQUIRED FOR THE FOLLOWING SYSTEMS AND COMPONENTS:
      a. ROOF COVERING, ROOF DECK, AND ROOF FRAMING CONNECTIONS.
      b. EXTERIOR WALL COVERING AND WALL CONNECTIONS TO ROOF AND FLOOR DIAPHRAGMS AND FRAMING.

9. SPECIAL INSPECTION FOR SEISMIC-RESISTANCE (SECTION 1705.13):
   A. DESIGNATED SEISMIC SYSTEMS FOR STRUCTURES ASSIGNED TO SEISMIC DESIGN CATEGORY C, D, E,OR F, THE SPECIAL INSPECTOR SHALL EXAMINE DESIGNATED SEISMIC SYSTEMS REQUIRING SEISMIC QUALIFICATIONS IN ACCORDANCE WITH SECTION 13.2.2 OF ASCE 7 AND VERIFY THAT THE LABEL, ANCHORAGE, AND MOUNTING CONFORM TO THE CERTIFICATE OF COMPLIANCE.
   B. ARCHITECTURAL COMPONENTS: PERIODIC SPECIAL INSPECTION IS REQUIRED FOR THE ERECTION AND FASTENING OF EXTERIOR CLADDING, INTERIOR AND EXTERIOR NON-BEARING WALLS AND INTERIOR AND EXTERIOR VENEER IN STRUCTURES ASSIGNED TO SEISMIC DESIGN CATEGORY D, E, OR F.
   C. MECHANICAL AND ELECTRICAL COMPONENTS: PERIODIC SPECIAL INSPECTION OF MECHANICAL AND ELECTRICAL COMPONENTS SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 1705.13.6 OF THE 2021 IBC.
   D. STORAGE RACKS: STEEL STORAGE RACKS & STEEL CANTILEVERED STORAGE RACKS THAT ARE 8 FEET IN HEIGHT OR GREATER AND ASSIGNED TO SEISMIC DESIGN CATEGORY D, E, OR F SHALL BE PROVIDED WITH PERIODIC SPECIAL INSPECTION AS REQUIRED BY TABLE 1705.13.7.

10. TESTING AND QUALIFICATION FOR SEISMIC RESISTANCE (SECTION 1705.14):
    A. TESTING FOR SEISMIC RESISTANCE SHALL BE REQUIRED AS SPECIFIED IN SECTIONS 1705.14.1 THROUGH 1705.14.4 OF THE 2021 IBC.

DEFINITIONS:

1. THE FOLLOWING DEFINITIONS APPLY TO ALL SPECIAL INSPECTION TABLES (WHERE APPLICABLE) UNLESS SPECIFICALLY NOTED OTHERWISE:
   A. CONTINUOUS – FULL-TIME OBSERVATION OF WORK REQUIRING SPECIAL INSPECTION BY AN APPROVED SPECIAL INSPECTOR.
   B. PERIODIC – AN APPROVED SPECIAL INSPECTOR MUST OBSERVE THE WORK REQUIRING SPECIAL INSPECTION PRIOR TO COMMENCEMENT OF WORK, INTERMITTENTLY DURING THE WORK, AND AT COMPLETION OF THE WORK.

CONCRETE CONSTRUCTION SPECIAL INSPECTION PER SECTION 1705.3 OF IBC 2021

VERIFICATION AND INSPECTION	CONTINUOUS	PERIODIC
REINFORCEMENT, INCLUDING PRE-STRESSING TENDONS AND VERIFYING PLACEMENT		X
REINFORCING BAR WELDING:		
VERIFICATION OF WELDABILITY OF REINFORCING BARS OTHER THAN ASTM A706		X
INSPECT SINGLE-PASS FILLET WELDS, MAXIMUM 5/16"		X
INSPECT ALL OTHER WELDS	X	
CAST-IN-PLACE ANCHORS		X
POST-INSTALLED ANCHORS IN HARDENED CONCRETE MEMBERS(NOTE 1)		
ADHESIVE ANCHORS INSTALLED IN HORIZONTALLY OR UPWARDLY INCLINED ORIENTATIONS TO RESIST SUSTAINED TENSION LOADS	X	
MECHANICAL ANCHORS AND ADHESIVE ANCHORS NOT DEFINED ABOVE		X
USE OF REQUIRED MIX DESIGN		X
PRIOR TO CONCRETE PLACEMENT, FABRICATE SPECIMENS FOR STRENGTH TEST, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE CONCRETE TEMPERATURE	X	
CONCRETE AND SHOTCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES	X	
MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES		X
INSPECT PRE-STRESSED CONCRETE FOR:		
APPLICATION OF PRE-STRESSING FORCES	X	
GROUTING OF BONDED PRE-STRESSING TENDONS	X	
ERECTION OF PRECAST CONCRETE		X
FOR PRECAST CONCRETE DIAPHRAGM CONNECTIONS OR REINFORCEMENT AT JOINTS CLASSIFIED AS MODERATE OR HIGH DEFORMABILITY ELEMENTS (MDE OR HDE) IN STRUCTURES ASSIGNED TO SEISMIC DESIGN CATEGORY C, D, E, OR F, INSPECT SUCH CONNECTIONS AND REINFORCEMENT IN THE FIELD FOR:		
INSTALLATION OF THE EMBEDDED PARTS	X	
COMPLETION OF THE CONTINUITY OF REINFORCEMENT ACROSS JOINTS	X	
COMPLETION OF CONNECTIONS IN THE FIELD	X	
INSPECT INSTALLATION TOLERANCES OF PRECAST CONCRETE DIAPHRAGM CONNECTIONS FOR COMPLIANCE WITH ACI 550.5		X
IN-SITU CONCRETE STRENGTH, PRIOR TO STRESSING OF TENDONS IN POST-TENSIONED CONCRETE AND PRIOR TO REMOVAL OF SHORES AND FORMS FROM BEAMS AND STRUCTURAL SLABS		X
FORMWORK FOR SHAPE, LOCATION, AND DIMENSIONS OF CONCRETE MEMBER BEING FORMED		X

NOTES:

1. SPECIFIC REQUIREMENTS FOR SPECIAL INSPECTION SHALL BE INCLUDED IN THE RESEARCH REPORT FOR THE ANCHOR ISSUED BY AN APPROVED SOURCE IN ACCORDANCE WITH SECTION 17.8.2 OF ACI 318, OR OTHER QUALIFICATION PROCEDURES. WHERE SPECIFIC REQUIREMENTS ARE NOT PROVIDED, SPECIAL INSPECTION REQUIREMENTS SHALL BE SPECIFIED BY THE REGISTERED DESIGN PROFESSIONAL AND SHALL BE APPROVED BY THE BUILDING OFFICIAL PRIOR TO COMMENCEMENT OF THE WORK.

MASONRY CONSTRUCTION SPECIAL INSPECTION PER SECTION 1705.4 OF IBC 2021

VERIFICATION AND INSPECTION	CONTINUOUS	PERIODIC
AS MASONRY CONSTRUCTION BEGINS, VERIFY:		
PROPORTIONS OF SITE-PREPARED MORTAR		X
GRADE, TYPE AND SIZE OF REINFORCEMENT, CONNECTORS, AND ANCHOR BOLTS		X
SAMPLE PANEL CONSTRUCTION		X
PRIOR TO GROUTING, VERIFY:		
GROUT SPACE		X
PLACEMENT OF REINFORCEMENT, CONNECTORS AND ANCHOR BOLTS		X
PROPORTIONS OF SITE-PREPARED GROUT		X
DURING CONSTRUCTION, VERIFY:		
MATERIALS AND PROCEDURES WITH APPROVED SUBMITTALS		X
PLACEMENT OF MASONRY UNITS AND MORTAR JOINT CONSTRUCTION		X
SIZE AND LOCATION OF STRUCTURAL MEMBERS		X
TYPE, SIZE, AND LOCATION OF ANCHORS, INCLUDING OTHER DETAILS OF ANCHORAGE OF MASONRY TO STRUCTURAL MEMBERS, FRAMES, OR OTHER CONSTRUCTION		X
WELDING OF REINFORCEMENT	X	
PREPARATION, CONSTRUCTION, AND PROTECTION OF MASONRY DURING COLD OR HOT WEATHER (TEMPERATURE BELOW 40°F OR ABOVE 90°F, RESPECTIVELY)		X
PLACEMENT OF GROUT	X	
OBSERVE PREPARATION OF GROUT SPECIMENS, MORTAR SPECIMENS, AND / OR PRISMS		X

NOTES:

1. DURING CONSTRUCTION, VERIFY SLUMP FLOW AND VISUAL STABILITY INDEX (VSI) WHEN SELF-CONSOLIDATING GROUT IS DELIVERED TO THE PROJECT SITE.
2. PRIOR TO CONSTRUCTION, VERIFY F'm
3. PRIOR TO CONSTRUCTION, VERIFY COMPLIANCE OF SUBMITTALS WITH THE APPROVED CONSTRUCTION DOCUMENTS.

SOIL SPECIAL INSPECTION PER SECTION 1705.6 OF IBC 2021

VERIFICATION AND INSPECTION	CONTINUOUS	PERIODIC
VERIFY MATERIALS BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE DESIGN BEARING CAPACITY		X
VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL		X
PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS		X
DURING FILL PLACEMENT, VERIFY PROPER MATERIALS AND PROCEDURES IN ACCORDANCE w/ THE PROVISIONS OF THE APPROVED GEOTECHNICAL REPORT. VERIFY DENSITIES AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF COMPACTED FILL.	X	
PRIOR TO PLACEMENT OF COMPACTED FILL, INSPECT SUBGRADE AND VERIFY SITE HAS BEEN PREPARED PROPERLY		X

WOOD CONSTRUCTION SPECIAL INSPECTION PER SECTION 1705.5 OF IBC 2021

VERIFICATION AND INSPECTION	CONTINUOUS	PERIODIC
HIGH-LOAD DIAPHRAGMS DESIGNED IN ACCORDANCE WITH SECTION 2306.2 SHALL BE INSTALLED WITH SPECIAL INSPECTIONS AS INDICATED IN SECTION 1704.2:		
WOOD STRUCTURAL PANEL SHEATHING (GRADE / THICKNESS)		X
NOMINAL SIZE OF FRAMING MEMBERS AT ADJOINING PANEL EDGES		X
NAIL OR STAPLE DIAMETER AND LENGTH		X
NUMBER OF FASTENER LINES		X
SPACING BETWEEN FASTENERS IN EACH LINE AND AT EDGE MARGINS		X
FIELD GLUING OPERATIONS OF WOOD SHEAR WALLS, WOOD DIAPHRAGMS, DRAG STRUTS, BRACES, AND HOLD-DOWNS	X	
NAILING, BOLTING, ANCHORING, AND OTHER FASTENING COMPONENTS WITHIN THE FOLLOWING ELEMENTS: WOOD SHEAR WALLS, WOOD DIAPHRAGMS, DRAG STRUTS, BRACES, AND HOLD-DOWNS		X

NOTES:

1. SPECIAL INSPECTION IS NOT REQUIRED FOR WOOD SHEAR WALLS, SHEAR PANELS AND DIAPHRAGMS, INCLUDING NAILING, BOLTING, ANCHORING AND OTHER FASTENING TO OTHER COMPONENTS OF THE WOOD SHEAR WALLS, SHEAR PANELS AND DIAPHRAGMS WHERE THE FASTENER SPACING OF THE SHEATHING IS MORE THAN 4 INCHES ON CENTER.

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FOR:
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3718 NORTH WOLF CREEK DRIVE
EDEN, UTAH 84310

COBABE RANCH AND EDEN CROSSING WELL HOUSE AND BOOSTER STATION

(PWS. NO. 29132)
EDEN, UTAH

PROFESSIONAL STRUCTURAL ENGINEER
7-22-2025
No. 9062337
CODY J. SANTOS
STATE OF UTAH

PERMIT 07/23/2025

NO.	DATE	REVISION

SPECIAL INSPECTIONS

PROJECT NUMBER 140188
DATE 07-22-2025
PROJECT MANAGER CJS
DESIGNED BY RM

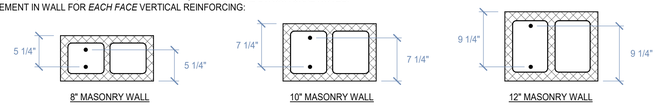
S011

MASONRY WALL SCHEDULE

MARK	THICKNESS	VERTICAL REINFORCING			HORIZONTAL REINFORCING			COMMENTS
		SIZE	SPACING	LOCATION	SIZE	SPACING	LOCATION	
MW-8A	8"	#5	32" O.C.	CENTERED	#5	48" O.C.	CENTERED	--
MW-8B	8"	#5	16" O.C.	CENTERED	#5	48" O.C.	CENTERED	--
MW-8C	8"	#5	8" O.C.	CENTERED	#5	48" O.C.	CENTERED	--

NOTES:

1. INSTALL (2) #5 BARS AROUND ALL WINDOWS, DOORS, OPENINGS, & WALL ENDS, TYPICAL U.N.O.
2. INSTALL SOLID GROUTED, 8" BOND BEAM (8" TOTAL DEPTH) WITH (2) #5 LONGITUDINAL BARS @ EACH FLOOR & ROOF BEARING ELEVATIONS.
3. DOWELS MATCHING VERTICAL REINFORCING SIZE & SPACING SHALL EXTEND INTO FOOTING & TERMINATE WITH A 90-DEGREE STANDARD HOOK. ENSURE VERTICAL DOWEL HOOKS AROUND BOTTOM MAT OF FOOTING REINFORCING, U.N.O.
4. ANCHOR HORIZONTAL BAR ENDS AROUND VERTICAL BARS WITH A 90-DEGREE HOOK AT ALL WALL ENDS & OPENING EDGES.
5. INSTALL BENT CORNER BARS TO MATCH HORIZONTAL REINFORCING AT ALL CORNERS & WALL INTERSECTIONS. EACH LEG OF BENT CORNER BARS TO LAP HORIZONTAL WALL REINFORCING.
6. ★★ - INSTALL ADDITIONAL HORIZONTAL REINFORCING BASED ON THE JAMB WIDTH DIMENSIONS INDICATED IN THE MASONRY JAMB HORIZONTAL REINFORCING SCHEDULE WHERE NOTED WITH '*' ON PLANS.
7. SEE MASONRY REINFORCING LAP SPLICE LENGTH SCHEDULE FOR MINIMUM LAP SPLICE LENGTHS.
8. SEE GENERAL STRUCTURAL NOTES FOR ADDITIONAL REQUIREMENTS.
9. SPECIAL INSPECTION IS REQUIRED FOR ALL MASONRY, SEE GENERAL STRUCTURAL NOTES.
10. BAR PLACEMENT IN WALL FOR *EACH FACE* VERTICAL REINFORCING:



8" MASONRY WALL | 10" MASONRY WALL | 12" MASONRY WALL

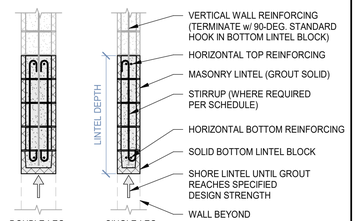
EACH FACE VERTICAL REINFORCING

MASONRY LINTEL SCHEDULE

MARK	BEAM DIMENSIONS		HORIZONTAL REINFORCING			STIRRUPS			COMMENTS
	WIDTH	DEPTH	QUANTITY	SIZE	LOCATION	SIZE	TYPE	SPACING	
ML-8A	8"	8"	(2)	#5	BOTTOM	--	--	--	--
ML-8B	8"	16"	(2)	#5	TOP & BOTTOM	--	--	--	--
ML-8C	8"	24"	(2)	#5	TOP & BOTTOM	--	--	--	--

NOTES:

1. ALL MASONRY LINTELS SHALL BE CONSTRUCTED USING SINGLE OPEN-ENDED MASONRY UNITS FOR FULL DEPTH OF LINTEL ABOVE SOLID BOTTOM LINTEL BLOCK.
2. ALL MASONRY LINTELS SHALL BE SOLID GROUTED AND GROUTED MONOLITHICALLY WITH ADJACENT SUPPORT WALL OR COLUMN AT EACH END.
3. WALL REINFORCING ABOVE ALL LINTELS SHALL MATCH THAT OF ADJACENT WALL TYPE, TYPICAL U.N.O. TERMINATE VERTICAL WALL REINFORCING WITH 90-DEGREE STANDARD HOOK IN BOTTOM LINTEL BLOCK. LAP SPLICE NOT PERMITTED WITHIN LINTEL.
4. TERMINATE STIRRUPS WITH 180-DEGREE STANDARD HOOK AT TOP & BOTTOM OF LINTEL. ALTERNATE DIRECTION OF SINGLE-LEG STIRRUP.
5. EXTEND ALL HORIZONTAL REINFORCING MINIMUM LAP SPLICE LENGTH BEYOND THE EDGE OF THE OPENING. IF EXTENSION CANNOT BE ACHIEVED, TERMINATE BARS WITH 90-DEGREE STANDARD HOOK AT END OF WALL OR COLUMN.
6. SPLICE TOP HORIZONTAL BARS AT MID-SPAN OF LINTEL ONLY & BOTTOM HORIZONTAL BARS OVER SUPPORTS ONLY. SEE MASONRY REINFORCING LAP SPLICE LENGTH SCHEDULE FOR MINIMUM LAP SPLICE LENGTHS.
7. HORIZONTAL WALL REINFORCING SHALL BE CONTINUOUS THROUGH MASONRY LINTEL. WHERE HORIZONTAL WALL REINFORCING & HORIZONTAL LINTEL REINFORCING OCCUR IN SAME COURSE, USE LARGER REINFORCING.
8. NO PENETRATIONS PERMITTED THROUGH MASONRY LINTEL.
9. SEE GENERAL STRUCTURAL NOTES FOR ADDITIONAL REQUIREMENTS.



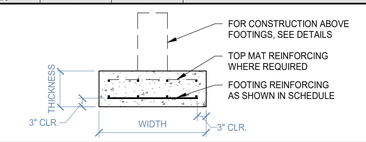
DOUBLE-LEG STIRRUP | SINGLE-LEG STIRRUP

CONCRETE CONTINUOUS FOOTING SCHEDULE

MARK	FOOTING TYPE	WIDTH	THICKNESS	LONGITUDINAL REINFORCING		TRANSVERSE REINFORCING		COMMENTS
				QUANTITY	SIZE	SIZE	SPACING	
FC2.0	CONTINUOUS	2' - 0"	12"	(2)	#5	--	--	--

NOTES:

1. CONTRACTOR TO DETERMINE REQUIRED DEPTH OF FOOTINGS TO MEET FROST PROTECTION. SEE FOUNDATION SECTION OF GSN FOR MINIMUM REQUIREMENTS.
2. AT CONTINUOUS FOOTINGS, SPACE LONGITUDINAL REINFORCING EVENLY, TYPICAL UNLESS NOTED OTHERWISE.
3. AT SPOT FOOTINGS, SPACE LONGITUDINAL & TRANSVERSE REINFORCING EVENLY, TYPICAL UNLESS NOTED OTHERWISE.
4. SEE GENERAL STRUCTURAL NOTES FOR ADDITIONAL REQUIREMENTS.



CONCRETE WALL SCHEDULE

MARK	WALL THICKNESS	REINFORCING						COMMENTS
		VERTICAL			HORIZONTAL			
		SIZE	SPACING (NOTE 10)	LOCATION	SIZE	SPACING	LOCATION	
CW-8A	8"	#5	16" O.C.	CENTER	#5	16" O.C.	CENTER	TYPICAL U.N.O.

NOTES:

1. EXTEND VERTICAL BARS FROM THE FOOTING TO WITHIN 3" OF TOP OF WALL.
2. DOWELS MATCHING VERTICAL REINFORCING SIZE & SPACING SHALL EXTEND INTO FOOTING & TERMINATE WITH A 90-DEGREE STANDARD HOOK. ENSURE VERTICAL DOWEL HOOKS AROUND BOTTOM MAT OF FOOTING REINFORCING.
3. EXTEND VERTICAL LEG OF DOWEL MIN. LAP SPLICE LENGTH INTO WALL.
4. ALTERNATE DIRECTION OF STANDARD HOOK AT EVERY OTHER BAR.
5. INSTALL SCHEDULED HORIZONTAL REINFORCING WITHIN 4" OF TOP & BOTTOM OF WALL, U.N.O.
6. INSTALL CORNER REINFORCING SO AS TO LAP HORIZONTAL REINFORCING. SEE "TYPICAL CONCRETE WALL INTERSECTION REINFORCING" STRUCTURAL DETAIL.
7. INSTALL (2) REBAR ABOVE, (1) REBAR @ EACH SIDE, & (1) REBAR BELOW ALL OPENINGS. PLACE STEEL WITHIN 2" OF OPENINGS, VERTICAL BARS AROUND OPENINGS SHALL EXTEND FROM THE FOOTING TO WITHIN 3" OF TOP OF WALL & EXTEND HORIZONTAL BARS MIN. LAP SPLICE LENGTH BEYOND EDGE OF OPENINGS.
8. ALL CONCRETE WALL TYPES MAY NOT BE USED, SEE PLAN FOR REQUIREMENTS.
9. SEE GENERAL STRUCTURAL NOTES FOR ADDITIONAL REQUIREMENTS.
10. WHERE MASONRY WALL OCCURS ABOVE CONCRETE WALL, SPACING OF VERTICAL DOWELS IN CONCRETE WALL SHALL MATCH SPACING OF MASONRY WALL VERTICAL REINFORCING WITHOUT EXCEEDING SPACING NOTED IN THE SCHEDULE ABOVE.

CONCRETE REINFORCING LAP SPLICE LENGTH SCHEDULE

BAR SIZE	BAR DIAMETER (IN.)	f'c = 3,000 PSI				f'c = 4,000 PSI				f'c = 5,000 PSI			
		TYPICAL SPLICE (IN)		TOP BAR SPLICE (IN)		TYPICAL SPLICE (IN)		TOP BAR SPLICE (IN)		TYPICAL SPLICE (IN)		TOP BAR SPLICE (IN)	
		CLASS A	CLASS B	CLASS A	CLASS B	CLASS A	CLASS B	CLASS A	CLASS B	CLASS A	CLASS B	CLASS A	CLASS B
3	0.375	17	22	22	29	15	20	20	25	13	17	17	22
4	0.500	22	29	29	38	19	25	25	33	17	23	23	30
5	0.625	28	36	36	47	24	31	31	40	22	29	29	36
6	0.750	33	43	43	56	29	38	38	48	26	34	34	44
7	0.875	48	63	63	82	42	55	55	70	38	49	49	64
8	1.000	55	72	72	94	48	62	62	81	43	56	56	73
9	1.128	62	81	81	105	54	70	70	91	48	63	63	82
10	1.270	70	91	91	118	61	79	79	103	54	71	71	92
11	1.410	78	101	101	131	67	87	87	113	60	78	78	101

NOTES:

1. ALL LAP SPLICE LENGTHS ARE CLASS B UNLESS NOTED OTHERWISE ON PLANS.
2. HORIZONTAL BARS ARE CLASSIFIED AS TOP BARS WHERE 12" OR MORE OF FRESH CONCRETE IS CAST BELOW THE LAP SPLICE.
3. FOR ALL EPOXY-COATED BARS, LAP SPLICE LENGTHS SHALL BE MULTIPLIED BY:
   - 1.5 WHEN CLEAR COVER IS LESS THAN 3 BAR DIAMETERS & CLEAR SPACING IS LESS THAN 6 BAR DIAMETERS, OR
   - 1.2 FOR ALL OTHER EPOXY-COATED BARS.
4. FOR ALL LIGHT-WEIGHT CONCRETE, LAP SPLICE LENGTHS SHALL BE MULTIPLIED BY 1.33.

MASONRY REINFORCING LAP SPLICE LENGTH SCHEDULE

BAR SIZE	BAR DIAMETER (IN.)	f'm = 2,000 PSI							
		6" CMU		8" CMU		10" CMU		12" CMU	
		CENTERED REINFORCING	EACH FACE REINFORCING	CENTERED REINFORCING	EACH FACE REINFORCING	CENTERED REINFORCING	EACH FACE REINFORCING	CENTERED REINFORCING	EACH FACE REINFORCING
3	0.375	15	--	15	15	15	15	15	15
4	0.500	20	--	20	21	20	20	20	20
5	0.625	28	--	25	37	25	31	25	31
6	0.750	53	--	38	79	30	57	30	57
7	0.875	--	--	52	--	40	78	35	78
8	1.000	--	--	79	--	61	117	50	117

NOTES:

1. FOR ALL EPOXY-COATED BARS, LAP SPLICE LENGTHS SHALL BE MULTIPLIED BY 1.50.
2. ALL LAP SPLICE LENGTHS SHOWN ARE IN UNITS OF INCHES.

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COBABE RANCH AND EDEN CROSSING WELL HOUSE AND BOOSTER STATION

(PWS. NO. 29132)
EDEN, UTAH

PROFESSIONAL STRUCTURAL ENGINEER
No. 9062337
CODY J. SANTOS
STATE OF UTAH
7-22-2025

PERMIT 07/23/2025

NO.	DATE	REVISION

STRUCTURAL SCHEDULES

PROJECT NUMBER 14018B
DATE 07-22-2025
PROJECT MANAGER CJS
DESIGNED BY RM

S021

ROOF FRAMING GENERAL NOTES

1. REFER TO ARCHITECTURAL PLANS FOR ALL DIMENSIONS. CONTRACTOR TO VERIFY ALL DIMENSIONS BEFORE STARTING CONSTRUCTION. DO NOT SCALE DRAWINGS. RESOLVE ANY DISCREPANCY WITH THE ARCHITECT. NOTIFY STRUCTURAL ENGINEER THROUGH THE ARCHITECT OF ANY VARIATIONS FROM DIMENSIONS AND CONDITIONS SHOWN BY THIS DRAWING.
2. NOT ALL OPENINGS THROUGH ROOF AND WALLS ARE SHOWN. COORDINATE OPENING SIZES AND LOCATIONS WITH ARCHITECTURAL, MECHANICAL, ELECTRICAL AND TYPICAL STRUCTURAL DETAILS.
3. SEE ARCHITECTURAL DRAWINGS FOR ROOF DRAINAGE PLAN AND LOCATIONS.
4. ALL MASONRY LINTELS DESIGNATED ON THIS SHEET OCCUR ABOVE WALL OPENINGS IN LEVEL BELOW, U.N.O.
5. ALL MASONRY WALLS DESIGNATED ON THIS SHEET OCCUR AT THIS FRAMING LEVEL AND CONTINUE TO NEXT FRAMING LEVEL ABOVE.
6. INSTALL SIMPSON H1 CLIP EACH JOIST BEARING LOCATION.
7. ALL SPECIFIED HARDWARE IS SIMPSON STRONG-TIE. INSTALL ALL HARDWARE PER MANUFACTURER'S SPECIFICATIONS (VERIFY PROPER SIZE, SEAT SLOPE, AND SKEW). CONTACT ENGINEER FOR ALL HARDWARE SUBSTITUTIONS.
8. INSTALL FULL DEPTH JOIST BLOCKING AT ALL JOIST BEARING LOCATIONS.
9. SEE GENERAL STRUCTURAL NOTES FOR ADDITIONAL INFORMATION.

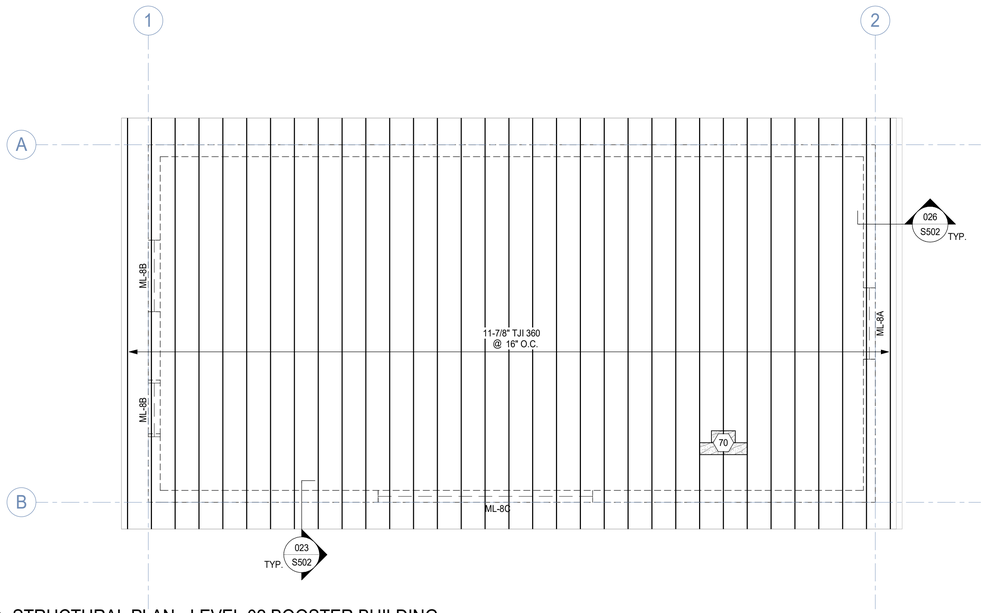
ROOF SHEATHING GENERAL NOTES

1. INSTALL 5/8" 40/20 APA RATED SHEATHING.
2. NAIL PANELS w/ 0.131"x2-1/2" NAILS @ 6" EDGE / 12" FIELD.
3. INSTALL H CLIPS AT ALL UNSUPPORTED PANEL EDGES.
4. PROVIDE 1/8" GAP BETWEEN PANELS AT INSTALLATION.
5. SHEATH COMPLETELY UNDER ALL OVERBUILD AREAS.

ROOF FRAMING KEYED NOTES

70 ORIENTATION OF ROOF SHEATHING (PANEL SIZE NOT DRAWN TO SCALE), PANEL EDGES SHALL ALIGN w/ FRAMING, LONG DIRECTION OF PANEL SHALL BE PERPENDICULAR TO FRAMING DIRECTION.

71 WOOD TRUSS DIAGONAL BRACING @ 48" O.C. SEE DETAIL 025/S502



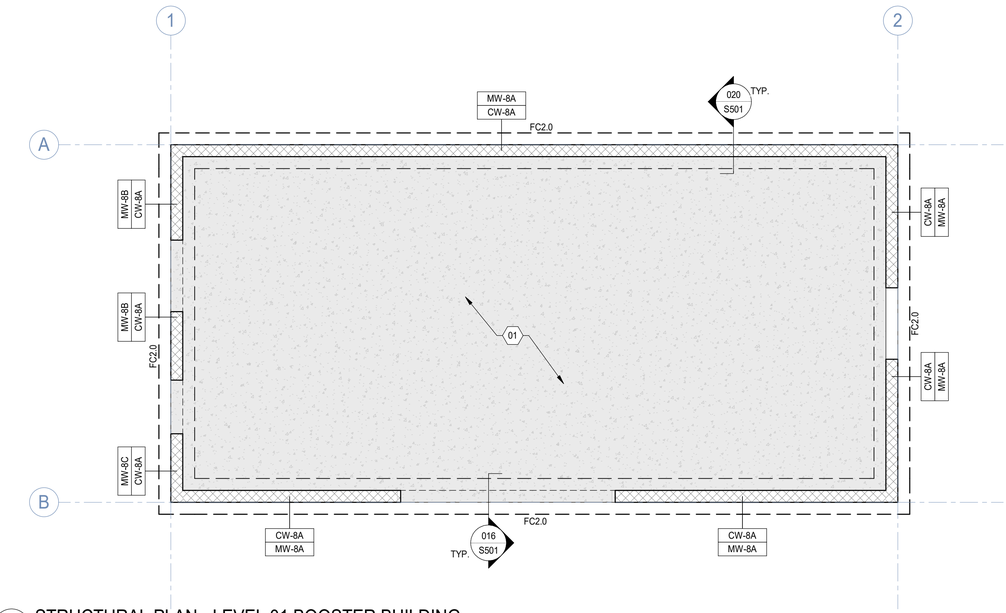
2 STRUCTURAL PLAN - LEVEL 02 BOOSTER BUILDING
SCALE: 1/4" = 1'-0"

FOUNDATION GENERAL NOTES

1. REFER TO ARCHITECTURAL PLANS FOR ALL DIMENSIONS. CONTRACTOR TO VERIFY ALL DIMENSIONS BEFORE STARTING CONSTRUCTION. DO NOT SCALE DRAWINGS. RESOLVE ANY DISCREPANCY WITH THE ARCHITECT. NOTIFY STRUCTURAL ENGINEER THROUGH THE ARCHITECT OF ANY VARIATIONS FROM DIMENSIONS AND CONDITIONS SHOWN BY THIS DRAWING.
2. COORDINATE STRUCTURAL REQUIREMENTS AT WALLS AND FOOTINGS WITH TYPICAL STRUCTURAL DETAILS.
3. COORDINATE LOCATIONS OF UTILITY TRENCHES (IF APPLICABLE) WITH RESPECTIVE DRAWINGS AND SUB-CONTRACTORS. SLAB REINFORCING SHALL BE CONTINUOUS OVER TRENCH.
4. ALL TOP OF FOOTING ELEVATIONS ARE BASED ON FINISH FLOOR = 100'-0". VERIFY WITH ARCHITECTURAL PLANS.
5. PROVIDE MINIMUM FROST DEPTH PER GENERAL STRUCTURAL NOTES. COORDINATE FOOTING STEPS (IF APPLICABLE) WITH CIVIL AND ARCHITECTURAL PLANS. SEE TYPICAL CONCRETE STEPPED FOOTING DETAIL IN STRUCTURAL DETAILS.
6. CONTRACTOR SHALL COORDINATE FLOOR SLAB DEPRESSIONS AND SLAB SLOPES WITH ARCHITECTURAL PLANS.
7. NOT ALL OPENINGS THROUGH FLOORS AND WALLS ARE SHOWN. COORDINATE PENETRATION REQUIREMENTS (ADDITIONAL FRAMING ELEMENTS OR REINFORCING) AND LOCATIONS WITH ARCHITECTURAL, MECHANICAL, ELECTRICAL, AND TYPICAL STRUCTURAL DETAILS.
8. PROVIDE CONTROL JOINTS IN ALL SLABS PER THE GENERAL STRUCTURAL NOTES AND TYPICAL SLAB JOINT DETAIL.
9. CENTER ALL SPOT FOOTINGS UNDER COLUMNS AS SHOWN ON PLAN, TYPICAL U.N.O. SEE ARCHITECTURAL DRAWINGS FOR DIMENSIONS TO ALL STEEL COLUMNS.
10. SEE GENERAL STRUCTURAL NOTES FOR ADDITIONAL INFORMATION.

FOUNDATION KEYED NOTES

01 8" CONCRETE SLAB REINFORCED w/ #5 BARS @ 12" O.C. EACH WAY (CENTERED IN SLAB) OVER 4" LAYER OF FREE-DRAINING STRUCTURAL FILL.



1 STRUCTURAL PLAN - LEVEL 01 BOOSTER BUILDING
SCALE: 1/4" = 1'-0"

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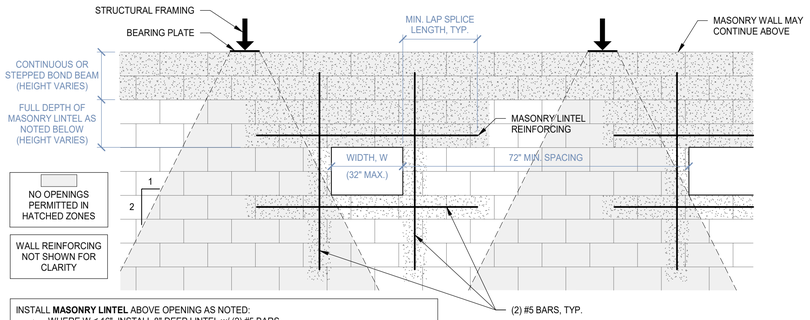
PERMIT 07/23/2025

NO.	DATE	REVISION

STRUCTURAL PLAN - BOOSTER BUILDING

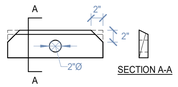
PROJECT NUMBER 14018B
DATE 07-22-2025
PROJECT MANAGER CJS
DESIGNED BY RM

S111



INSTALL **MASONRY LINTEL** ABOVE OPENING AS NOTED:
- WHERE W ≤ 16", INSTALL 8" DEEP LINTEL w/ (2) #5 BARS.
- WHERE 16" < W ≤ 24", INSTALL 16" DEEP LINTEL w/ (2) #5 BARS IN BOTTOM COURSE.
- WHERE 24" < W ≤ 32", INSTALL 16" DEEP LINTEL w/ (2) #5 BARS IN TOP & BOTTOM COURSES.
- WHERE W >32", SEE PLAN FOR SPECIFIED LINTEL.

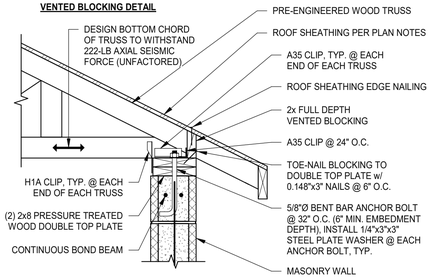
017 TYPICAL SMALL WALL PENETRATIONS (≤ 32" x 32")
SCALE: N.T.S.



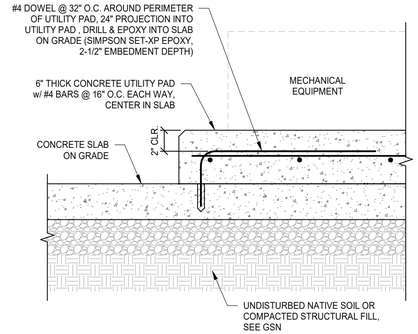
SECTION A-A

VENTED BLOCKING DETAIL

VENTED BLOCKING NOTES:
1. EITHER CUT TOP CORNERS OF BLOCK, OR DRILL 2"Ø HOLE FOR ATTIC VENTILATION
2. SLOPE TOP OF BLOCK TO MATCH ROOF SLOPE



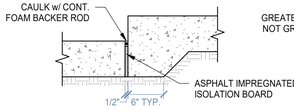
018 WOOD TRUSS BEARING @ MASONRY WALL
SCALE: N.T.S.



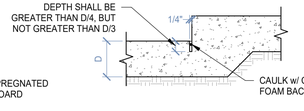
014 TYPICAL UTILITY PAD
SCALE: N.T.S.

DOWELED CONSTRUCTION JOINT - DOWEL REQUIREMENTS	
SLAB THICKNESS	**DOWEL DIAMETER**
UP TO 6"	3/4"
6" < D ≤ 8"	1"
8" < D ≤ 10"	1-1/4"

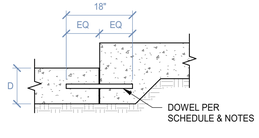
NOTES:
1. DOWELS SHALL BE SPACED AT 12" O.C.
2. DOWELS SHALL BE SMOOTH AND ROUND. AT CONTRACTOR'S OPTION, DIAMOND DOWELS ARE PERMITTED FOR USE IN LIEU OF ROUND DOWELS.
3. INSTALL DOWELS USING A POCKET FORMER, THIN BOND BREAKER, COAT OR GREASE AT ONE END OF EACH DOWEL TO PREVENT BOND.
4. ALIGN DOWELS STRAIGHT AND TRUE. MISALIGNED DOWELS MAY CAUSE CRACKING.
5. STAINLESS STEEL OR EPOXY COATED DOWELS SHALL BE USED IN EXTERIOR OR CORROSIVE ENVIRONMENTS.
6. WHEN DOWELS ARE USED IN EXPANSION JOINTS, EXPANSION END CAPS SHALL BE USED AT EACH DOWEL END.



ISOLATION JOINT

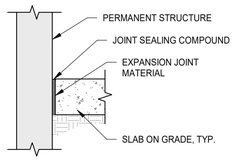


SAWCUT CONTROL JOINT

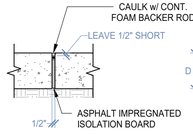


DOWELED CONSTRUCTION JOINT

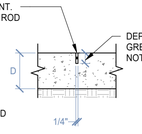
TYPICAL DEPRESSED JOINTS



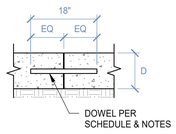
ISOLATION JOINT AT STRUCTURE



ISOLATION JOINT



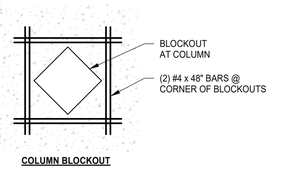
SAWCUT CONTROL JOINT



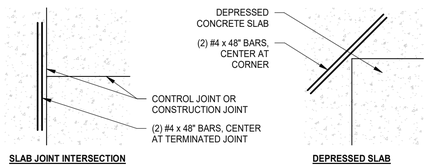
DOWELED CONSTRUCTION JOINT

TYPICAL FLAT JOINTS

010 TYPICAL SLAB ON GRADE JOINT DETAILS
SCALE: 1" = 1'-0"

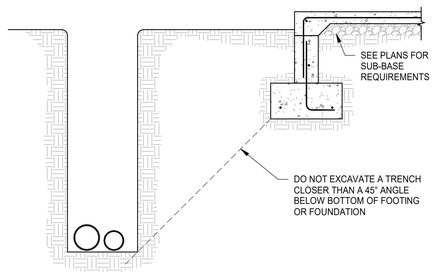


COLUMN BLOCKOUT

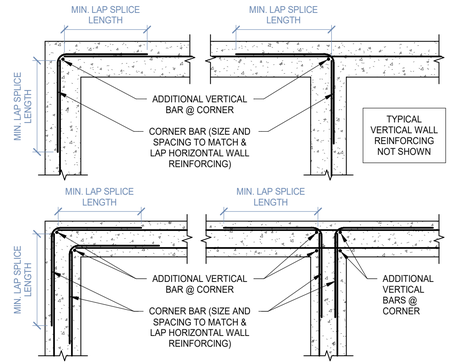


SLAB JOINT INTERSECTION **DEPRESSED SLAB**

011 TYPICAL ADD'L REINF. @ OPENINGS IN S.O.G.
SCALE: 1/2" = 1'-0"



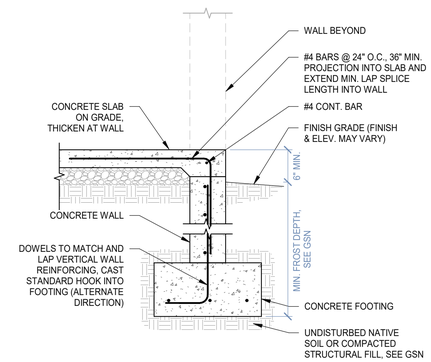
007 TYPICAL TRENCH PARALLEL TO FOUNDATION
SCALE: 1/2" = 1'-0"



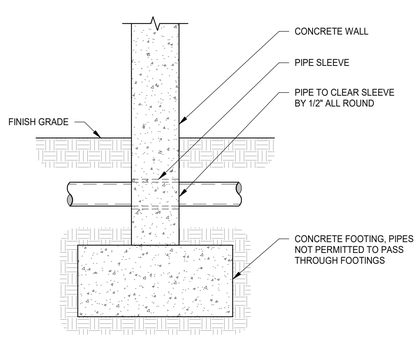
003 TYPICAL CONC. WALL INTERSECTION REINF.
SCALE: 3/4" = 1'-0"

CENTERED WALL REINFORCING

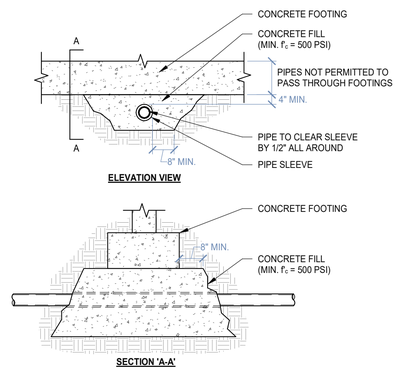
020 MASONRY WALL @ EXTERIOR FOOTING
SCALE: N.T.S.



016 CONCRETE WALL @ WALL OPENING
SCALE: N.T.S.



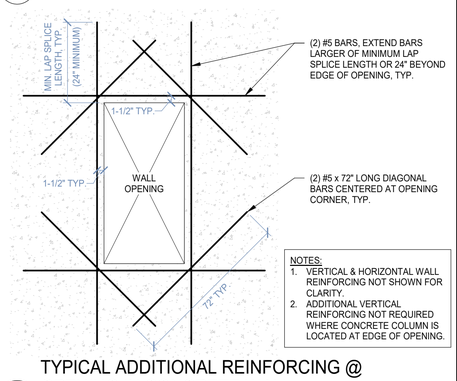
012 TYPICAL PIPE PENETRATION THRU FDTN.
SCALE: 1" = 1'-0"



ELEVATION VIEW

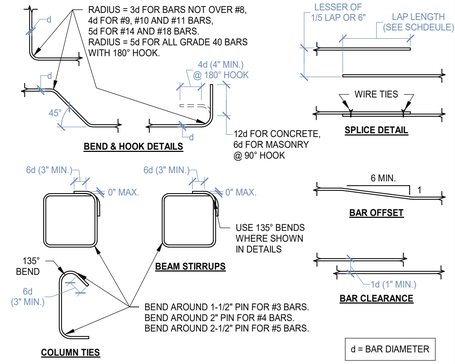
SECTION 'A-A'

008 TYPICAL PIPE PASSING BELOW FOOTING
SCALE: 1/2" = 1'-0"



NOTES:
1. VERTICAL & HORIZONTAL WALL REINFORCING NOT SHOWN FOR CLARITY.
2. ADDITIONAL VERTICAL REINFORCING NOT REQUIRED WHERE CONCRETE COLUMN IS LOCATED AT EDGE OF OPENING.

004 TYPICAL ADDITIONAL REINFORCING @ OPENING IN CONCRETE WALL
SCALE: 3/4" = 1'-0"



BEND & HOOK DETAILS

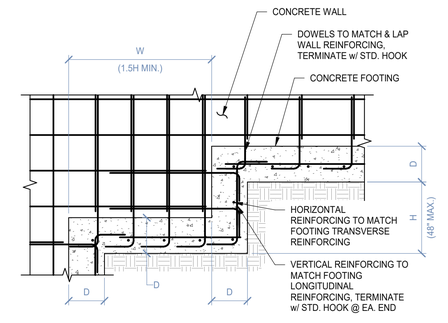
SPLICE DETAIL

COLUMN TIES **BEAM STIRRUPS**

BAR OFFSET **BAR CLEARANCE**

d = BAR DIAMETER

001 TYPICAL REINFORCING BAR DETAILS
SCALE: 3/4" = 1'-0"



002 TYPICAL CONCRETE STEPPED FOOTING
SCALE: 1/2" = 1'-0"

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FOR:
EDEN VALLEY OPPORTUNITY LLC
3718 NORTH WOLF CREEK DRIVE
EDEN, UTAH 84310

COBABE RANCH AND EDEN CROSSING WELL HOUSE AND BOOSTER STATION
(PWS. NO. 29132)
EDEN, UTAH

PROFESSIONAL STRUCTURAL ENGINEER
7-22-2025
No. 9062337
CODY J. SANTOS
STATE OF UTAH

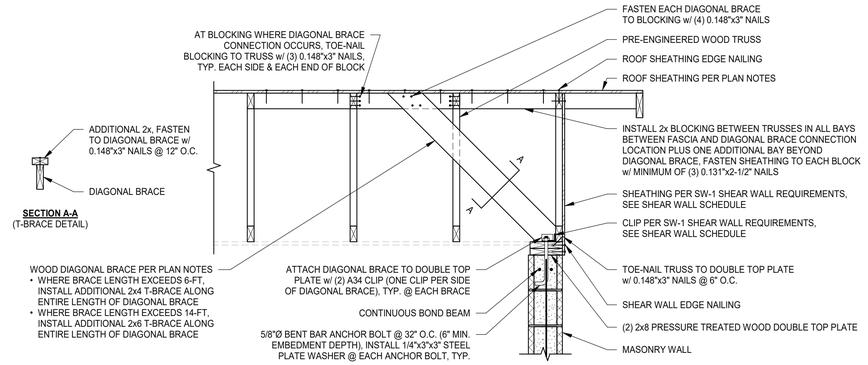
PERMIT 07/23/2025

NO.	DATE	REVISION

STRUCTURAL DETAILS

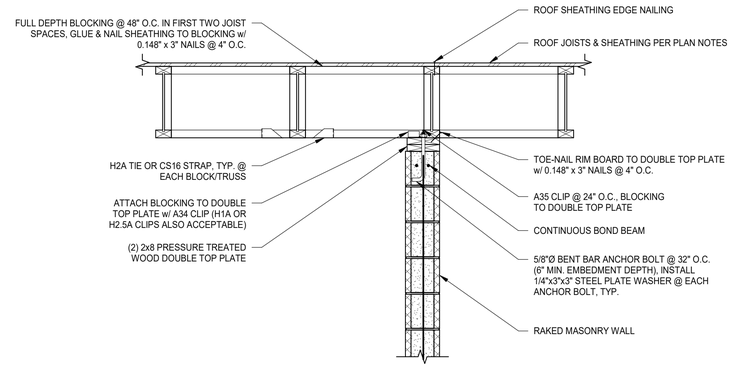
PROJECT NUMBER	DATE
14018B	07-22-2025
PROJECT MANAGER	DESIGNED BY
CJS	RM

S501



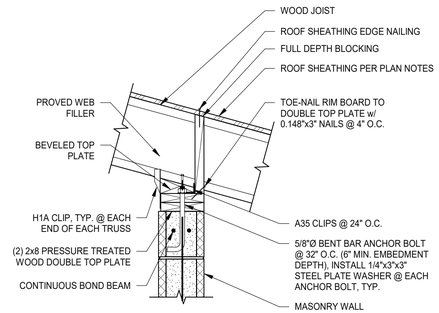
025 STRUCTURAL MASONRY WALL BRACING

SCALE: N.T.S.



026 RAKED STRUCTURAL MASONRY WALL BRACING

SCALE: N.T.S.



023 WOOD JOIST BEARING @ MASONRY WALL

SCALE: N.T.S.

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STRUCTURAL DETAILS

PROJECT NUMBER	DATE
14018B	07-22-2025
PROJECT MANAGER	DESIGNED BY
CJS	RM

S502

SCHEMATICS & DIAGRAMS

SYMBOL	DESCRIPTION
■	TERMINAL LUG OR STRIP
	TRANSFORMER
	GROUND CONNECTION
	BOND TO METALLIC WATER PIPE
	BOND TO METALLIC WATER PIPE
	BOND TO BUILDING STEEL
	GENERATOR

LIGHTING

SYMBOL	DESCRIPTION
	FLUORESCENT LIGHT FIXTURE, SEE FIXTURE SCHEDULE.
	EMERGENCY LIGHTING, SEE FIXTURE SCHEDULE.
F#	LIGHTING FIXTURE TYPE - SEE FIXTURE SCHEDULE.
$	SINGLE POLE SWITCH
$3	3 WAY SWITCH
$m	WALL MOUNTED MOTION SWITCH - DUAL TECHNOLOGY
$T	MOTOR RATED TOGGLE SWITCH
$D	DIGITAL OVERRIDE SWITCH
$P	SINGLE POLE SWITCH WITH PILOT LIGHT
SP	RECESSED CEILING MOUNTED SPEAKER BY OTHERS
	WALL MOUNTED MOTION SENSOR
	CEILING MOUNTED MOTION SENSOR
	CEILING-MOUNTED EXIT LIGHT, SEE FIXTURE SCHEDULE
	WALL-MOUNTED EXIT LIGHT, SEE FIXTURE SCHEDULE
	RECESSED CAN LIGHT, SEE FIXTURE SCHEDULE

CONTROLS & INSTRUMENTS

SYMBOL	DESCRIPTION
AE	ANALYZER ELEMENT
AIT	ANALYZING INDICATING TRANSMITTER
CGD	COMBUSTIBLE GAS DETECTOR
CIT	CONDUCTIVITY INDICATING TRANSMITTER
FE	FLOW ELEMENT
FIT	FLOW INDICATING TRANSMITTER
FS	FLOW SWITCH
LE	LEVEL ELEMENT
LIT	LEVEL INDICATING TRANSMITTER
LS	LEVEL SWITCH
LT	LEVEL TRANSMITTER
ME	MOISTURE ELEMENT
MV	MOTOR OPERATED VALVE OR GATE
OS	OVER TORQUE SWITCH
PIT	PRESSURE INDICATING TRANSMITTER
PS	PRESSURE SWITCH
SV	SOLENOID OPERATED VALVE
TE	TEMPERATURE ELEMENT
TS	TEMPERATURE SWITCH
TT	TEMPERATURE TRANSMITTER
ZS	LIMIT OR POSITION SWITCH
DS	DOOR SWITCH

SCHEMATICS & DIAGRAMS

SYMBOL	DESCRIPTION
	EMERGENCY STOP PUSH BUTTON (MAINTAINED)
	NORMALLY CLOSED PUSH BUTTON
	LOCKOUT STOP PUSH BUTTON
	NORMALLY OPEN PUSH BUTTON
T.C.	CONTACT - TIME DELAY T.C. = NORMALLY OPEN W/TIME DELAY CLOSING. I.C. - T.O. = NORMALLY OPEN WITH INSTANT CLOSING AND TIME DELAY OPENING. T.C.-T.O. = NORMALLY OPEN W/TIME DELAY CLOSING AND TIME DELAY OPENING AFTER DEENERGIZATION.
T.O.	CONTACT - TIME DELAY T.C. = NORMALLY CLOSED WITH TIME DELAY OPENING. T.O.-T.C. = NORMALLY CLOSED WITH TIME DELAY OPENING AND TIME DELAY CLOSING AFTER DEENERGIZATION. I.O.-T.C. = NORMALLY CLOSED WITH INSTANT OPENING AND TIME DELAY CLOSING.
	NORMALLY OPEN CONTACT
	NORMALLY CLOSED CONTACT
	LIMIT SWITCH
	PRESSURE SWITCH LOW
	PRESSURE SWITCH HIGH
	FLOW SWITCH
	LEVEL FLOAT SWITCH
	TEMPERATURE SWITCH
AMPS / POLES	DISCONNECT SWITCH SHOWN WITH RATING AND NUMBER OF POLES.
	FUSEHOLDER OR FUSEBLOCK
AMPS POLES	CIRCUIT BREAKER OR MOTOR CIRCUIT PROTECTOR, SHOWN WITH TRIP RATING AND NUMBER OF POLES.
H O A OOX	3 POSITION SELECTOR SWITCH HAND - OFF - AUTO, POSITION LEGEND: X=CLOSED O=OPEN
ON OFF XO	2 POSITION SELECTOR SWITCH, POSITION LEGEND: X=CLOSED O=OPEN
ICTO	TIMER RELAY CONTACT INSTANTANEOUS CLOSE TIME DELAY OPEN.
NOTC	TIMER RELAY CONTACT NORMALLY OPEN TIME DELAY CLOSE.
5	FULL VOLTAGE NONREVERSING (FVNR) MOTOR STARTER OR CONTACTER NUMBER DESIGNATES NEMA SIZE.
	RTU, PLC, OR RIO CONTACT
UM	UTILITY METER
X	BEACON ALARM LIGHT. LETTER INDICATES COLOR: R=RED, A=AMBER, B=BLUE, G=GREEN
X	PILOT LIGHT. LETTER INDICATES COLOR: R=RED, A=AMBER, B=BLUE, G=GREEN
R	RELAY
TD	TIME DELAY RELAY
AR	ALARM RELAY
ETM ETM	ELAPSED TIME METER
M	MOTOR STARTER OR CONTACTOR COIL
EOL	ELECTRONIC OVERLOAD RELAY
SSRV	SOLID STATE REDUCED VOLTAGE STARTER
VFD	VARIABLE FREQUENCY DRIVE
HF	HARMONIC FILTER
CTS	CURRENT TRANSFORMER
	THERMAL OVERLOAD RELAY
	LTC CONNECTION
	MC CONNECTION
X	MOTOR, X = HORSEPOWER
▲	DEVICE LOCATED AT REMOTE LOCATION.
	FUSE
●	NODE OR CONNECTION

POWER

SYMBOL	DESCRIPTION
	DUPLEX RECEPTACLE
	DUPLEX RECEPTACLE, RECESSED FLOOR MOUNTED
	DUPLEX RECEPTACLE, RECESSED CEILING MOUNTED
	QUADRAPLEX RECEPTACLE
	QUADRAPLEX RECEPTACLE, RECESSED FLOOR MOUNTED
	QUADRAPLEX RECEPTACLE, RECESSED CEILING MOUNTED
	ISOLATED GROUND TYPE DUPLEX RECEPTACLE
	SPECIAL PURPOSE OR WELDING OUTLET.
GFCI	GROUND FAULT CIRCUIT INTERRUPTER RECEPTACLE.
WP	WEATHERPROOF CONVENIENCE OUTLET
	FLUSH FLOOR DEVICE BOX
	HOME RUN TO PANEL - INDICATING 2 #12, #12 GND, 3/4" CONDUIT OR AS SHOWN.
	HOME RUN TO PANEL - INDICATING NUMBER OF CONDUCTORS - #12 OR AS SHOWN.
X-1,3,5	HOME RUN TO PANEL SHOWING BRANCH CIRCUIT NUMBERS.
	HATCH MARKS IN CONDUIT RUN DENOTES NUMBER OF CONDUCTORS IN CONDUIT. LONG HATCH MARK DENOTES GROUND CONDUCTOR. SIZE OF CONDUCTORS TO BE #12 AWG CONDUCTORS IN CONDUIT UNLESS NOTED OTHERWISE. UNMARKED CONDUITS SHALL BE 3/4" WITH 3 #12.
(E)	DENOTES EXISTING EQUIPMENT OR DEVICES
T	THERMOSTAT
X M	MOTOR, X = HORSE POWER
F	CEILING EXHAUST FAN
J	JUNCTION BOX
	ELECTRICAL PANEL, POWER OR LIGHTING
	METER BASE
	COMBINATION MOTOR STARTER, SEE SPECS
	DISCONNECT SWITCH. VOLTAGE RATING NEMA ENCLOSURE FUSE (NF-NO FUSE) POLES SIZE (AMPS)
+0'-0"	THIS NOTATION ADJACENT TO WALL OUTLET SYMBOL DENOTES MOUNTING HEIGHT ABOVE FINISHED FLOOR TO CENTER OF OUTLET DEVICE. IF NOT NOTED, THE MOUNTING HEIGHT TO CENTER SHALL BE AS DETAILED OR SPECIFIED.
$M	MANUAL MOTOR STARTER
$T	MANUAL MOTOR STARTER WITH OVERLOADS
DM	DAMPER MOTOR
F#	LIGHTING FIXTURE TYPE - SEE FIXTURE SCHEDULE.
$	SINGLE POLE SWITCH
$3	3 WAY SWITCH
$4	4 WAY SWITCH
	COMMUNICATION/DATA JACK. CONDUIT TO ABOVE CEILING. OWNER TO RUN WIRING.
2	DATA OR CATHODE RAY TUBE (CRT) TERMINAL OUTLET. +1'-6". (SINGLE, DOUBLE)
2 4	TELEPHONE JACK OUTLET. 1'-6". (SINGLE, DOUBLE, QUAD)

FEEDER DESIGNATION LOGIC

6	1	P: 2 N: 3 G: 4	5

1. NUMBER OF CONDUITS
2. P: NUMBER - SIZE OF PHASE CONDUCTORS PER CONDUIT
3. N: NUMBER - SIZE OF NEUTRAL CONDUCTOR(S) PER CONDUIT
4. G: NUMBER- SIZE OF GROUND CONDUCTOR(S) PER CONDUIT
5. SIZE OF EACH CONDUIT IN INCHES
6. CONDUIT NUMBER

KEY TO CONDUCTOR SIZE & TYPE

14 = #14 AWG COPPER	6 = #6 AWG COPPER	1/0 = 1/0 AWG COPPER	250 = 250 KCMIL COPPER
12 = #12 AWG COPPER	4 = #4 AWG COPPER	2/0 = 2/0 AWG COPPER	350 = 350 KCMIL COPPER
10 = #10 AWG COPPER	2 = #2 AWG COPPER	3/0 = 3/0 AWG COPPER	500 = 500 KCMIL COPPER
8 = #8 AWG COPPER		4/0 = 4/0 AWG COPPER	750 = 750 KCMIL COPPER

ABBREVIATIONS

A	AMPERE
AFF	ABOVE FINISHED FLOOR
AI	ANALOG INPUT
AIC	AMPS INTERRUPTING CAPACITY
AFD	ADJUSTABLE FREQUENCY DRIVES
AO	ANALOG OUTPUT
AS	AIR SUPPLY
ATS	AUTOMATIC TRANSFER SWITCH
BC	BYPASS CONTACTOR
C	CONDUIT
CB	CIRCUIT BREAKER
CL2	CHLORINE
CON	CONTACTOR
CPM	CUSTOMER POWER MONITORING
CPT	CONTROL POWER TRANSFORMER
CU	COPPER, BARE
CV	CONTROL VALVE
DCS	DISTRIBUTED CONTROL SYSTEM
DI	DISCRETE INPUT
DO	DISCRETE OUTPUT
DV/DT	DIFFERENTIAL VOLTAGE/TIME
DWG	DRAWING
ELR	END OF LINE RESISTER
ETM	ELAPSED TIME METER
EOL	ELECTRONIC OVERLOAD
ES	EMERGENCY STOP
EXIST	EXISTING
FA	FOUL AIR
FC	FAIL CLOSED
FE	FLOW ELEMENT
FLA	FULL LOAD AMPS
FS	FLOW SWITCH
FVNR	FULL VOLTAGE NON-REVERSING
FW	FINISHED WATER
G	GROUND
GES	GROUNDING ELECTRODE SYSTEM
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GFP	GROUND FAULT PROTECTION
GND	GROUND
GPD	GALLONS PER DAY
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GRS	GALVANIZED RIGID STEEL
H, HI	HIGH
H2S	HYDROGEN SULFIDE
HMI	HUMAN MACHINE INTERFACE
HOA	HAND-OFF-AUTO
HOR	HAND-OFF-REMOTE
I	CURRENT
IC	INSTRUMENTATION CABLE
ICR	INTERMITTENT CYCLE REACTOR
IO	INPUT/OUTPUT
ISC	SHORT CIRCUIT CURRENT
ISR	INTRINSICALLY SAFE RELAY
JB	JUNCTION BOX
L, LO	LOW
LAN	LOCAL AREA NETWORK
LC	LOOP CONTROLLER
LCL	LEVEL CONTROL, LOW
LCP	LOCAL CONTROL PANEL
LOS	LOCK-OUT-STOP
LR	LOCAL/REMOTE
LS	LEVEL SWITCH
LTC	LIQUID TIGHT FLEXIBLE CONDUIT
M	MOTOR
MA	MANUAL/AUTO, MILLIAMP
MAX	MAXIMUM
MC	MANUFACTURER'S CABLE
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MCP	MOTOR CIRCUIT PROTECTOR
MFR(S)	MANUFACTURER(S)
MGD	MILLION GALLONS PER DAY
MGL	MILLIGRAMS PER LITER
MH	MANHOLE
MIN	MINIMUM
ML	MIXED LIQUOR
MOV	MOTOR OPERATED VALVE
MTU	MASTER TELEMETRY UNIT
N	NEUTRAL
NEC	NATIONAL ELECTRICAL CODE
NECA	NATIONAL ELECTRICAL CONTRACTOR ASSOCIATION
NOTC	NORMALLY OPEN TIMED CLOSED
NPW	NON-POTABLE WATER
NS	NITROGEN SUPPLY
NTS	NOT TO SCALE
NTU	TURBIDITY
O.C.	ON CENTER
OF	OVERFLOW
OIT	OPERATOR INTERFACE TERMINAL
OL	OVERLOAD
OO	ON/OFF (MAINTAINED)
OR	OFF-REMOTE
P	PHASE OR POLE
PB	PULL BOX
PCP	PROCESS CONTROL PANEL
PFR	PHAS/POWER FAILURE RELAY
PI	PULSE INPUT
PLC	PROGRAMMABLE LOGIC CONTROLLER
PLI	PLANT INFLUENT
PKG	PACKAGE
PMP	PUMP
PNL	PANEL
PO	PULSE OUTPUT
PPG	POUNDS PER GALLON
PPH	POUNDS PER HOUR
PPM	PARTS PER MILLION
PR	PAIR
PRES	PRESSURE
PS	PRESSURE SWITCH
PSH	PRESSURE SWITCH, HIGH
PSI	POUNDS PER SQUARE INCH
PV	PROCESS VARIABLE
RAS	RETURN ACTIVATED SLUDGE
RW	RAW WATER
RCL	REMOTE I/O
RF	RADIO FREQUENCY
RIO	REMOTE INPUT/OUTPUT
RS	RAW SEWAGE
RSP	RAW SEWAGE PUMP
RST	RESET
RTD	RESISTANCE TEMPERATURE DETECTOR
RTU	REMOTE TELEMETRY UNIT
RWT	REFLECTED WAVE TRAP
SEQ	SERVICE ENTRANCE EQUIPMENT
SES	SERVICE ENTRANCE SECTION
SLC	SINGLE LOOP CONTROLLER
SLOS	START-LOCK-OFF-STOP
SMC	SUBMERSIBLE MANUFACTURER CABLE
SO2	SULFUR DIOXIDE
SP	SET POINT
SPC	SPARE CONDUIT
SPR	SPARE
SS	START/STOP
SSS	SOLID STATE STARTER (SOFT START)
ST	SHUNT TRIP
TC	TELEPHONE CABLE
TDOE	TIME DELAY ON ENERGIZE
TS	TEMPERATURE SWITCH
TSP	TWISTED SHIELDED PAIR
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSION
TYP	TYPICAL
UG	UNDERGROUND
V	VOLT
VFD	VARIABLE FREQUENCY DRIVE
W	WATT, WIRE
WAS	WASTE ACTIVATED SLUDGE
WP	WEATHERPROOF
XFMR	TRANSFORMER
XMTR	TRANSMITTER
ZS	POSITION SWITCH

ELECTRICAL LINETYPES

SYMBOL	DESCRIPTION
	EXPOSED CONDUIT
	UNDERGROUND CONDUIT
	BARE COPPER GROUND CONDUCTOR
	EXISTING EXPOSED CONDUIT
	EXISTING UNDERGROUND CONDUIT
	CAPPED UNDERGROUND CONDUIT OR STUBBUP
	NEW ELECTRICAL EQUIPMENT
	DETAIL VIEW OR MATCHING
	FUTURE
	CONDUIT DROP
	CONDUIT RISE

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COBABE RANCH AND EDEN CROSSING WELL HOUSE AND BOOSTER STATION

PWS. (NO. 29132)
EDEN, UTAH

PROFESSIONAL ENGINEER
11573207-2202
ROBERT J. HILLYER
01/23/25
STATE OF UTAH

PERMIT SET 7/23/2025

ELECTRICAL SYMBOL LEGEND

PROJECT NUMBER	PRINT DATE
14018B	7-14-2025
PROJECT MANAGER	DESIGNED BY
-	B. HILLYER

E-001

HEATH Engineering Company

CONTROLS CONDUIT SCHEDULE

C002	1	2 -#16 TSP G: 1 -#14	3/4"
C003	1	3 -#16 TSP G: 1 -#14	3/4"
C102	1	4 -#14 G: 1 -#14	3/4"
C106	1	12 -#14 G: 1 -#14	1"
C107	1	14 -#14 G: 1 -#14	1"
C201	1	ETHERNET CAT 6	1"
C202	1	MANUFACTURERS CABLE	1"
C203	1	ANTENNA CABLE	1"

POWER CONDUIT SCHEDULE

P001		CONDUIT AND WIRE BY UTILITY		
P002	3	WIRE BY UTILITY		3"
P003	1	WIRE BY UTILITY		1"
P004	1	WIRE BY UTILITY		3"
P100	1	P:	2 - #2	1"
		N:	NONE	
		G:	1 - #8	
P101	1	P:	2 - 500	2-1/2"
		N:	NONE	
		G:	1 - #2	

I/O SCHEDULE - BOOSTER

TYPE	I/O NUMBER	PREFIX	NUMBER	DESCRIPTION	NARRATIVE
DI	DI-01	YA	001	SKID FAIL	SKID FAILURE ALARM
DI	DI-02	YA	002	SKID FAIL	SKID FAILURE ALARM
DI	DI-03	YA	003	SKID FAIL	SKID FAILURE ALARM
DI	DI-04	YA	004	PUMP STOP	DOSING PUMP EXTERNAL STOP
DI	DI-05	LS	001	LEVEL SWITCH	DOSING PUMP EMPTY TANK ALARM
DI	DI-06	LS	002	LEVEL SWITCH	DOSING PUMP LOW LEVEL ALARM
DI	DI-07	XS	001	CONFIGURABLE	DOSING PUMP SPARE OUTPUT RELAY
DI	DI-08	XS	002	CONFIGURABLE	DOSING PUMP SPARE OUTPUT RELAY
DI	DI-09	LA	001	LEVEL SWITCH	SPILL CONTAINMENT SCALE LEVEL ALARM
DI	DI-10	NS	001	INTRUSION SWITCH	INTRUSION STATUS
DI	DI-11	LS	001	LEVEL SWITCH	FLOOD SWITCH ALARM
DI	DI-12	FE	001	FLOW ELEMENT	FLOW TOTALIZED
DI	DI-13	YA	001	POWER ALARM	POWER QUALITY ALARM
DI	DI-14	FE	002	FLOW ELEMENT	DOSING PUMP FLOW TOTALIZED
DO	DO-01	XC	001	RUN COMMAND	SKID RUN COMMAND
DO	DO-02	XC	002	RUN COMMAND	SKID RUN COMMAND
DO	DO-03	XC	003	RUN COMMAND	SKID RUN COMMAND
AI	AI-01	TT	001	TEMP TRANSMITTER	TEMPERATURE VALUE
AI	AI-02	LT	001	LEVEL TRANSMITTER	SPILL CONTAINMENT SCALE LEVEL
AI	AI-03	FT	001	FLOW TRANSMITTER	DOSING PUMP FLOW VALUE
AI	AI-04	FIT	001	FLOW TRANSMITTER	FLOW VALUE
AO	AO-01	XS	001	ANALOG	DOSING PUMP OUTPUT ANALOG
	COMM		001	CELLUALR ANTENNA	

NOTES

1. 0 ANALOG OUTPUTS ONBOARD, EXPANDABLE TO 4 WITH PN OP461
2. 8 DIGITAL INPUTS ONBOARD, EXPANDABLE TO 16 WITH PN OP653
3. 2 ANALOG INPUTS ONBOARD, EXPANDABLE TO 9 WITH PN OP465
4. 3 DIGITAL OUTPUTS ONBOARD, EXPANDABLE TO 9 WITH PN OP654

CONTROL NARRATIVE

A LOW LEVEL SIGNAL AT THE TANK WILL COMMUNICATE VIA MISSION CLOUD TO THE WELL BUILDING MISSION TO COMMAND A START ON WELL EC-1 AS LEAD.

A LOW-LOW LEVEL SIGNAL AT THE TANK WILL COMMUNICATE VIA MISSION CLOUD TO THE WELL BUILDING MISSION TO COMMAND A START ON WELL EC-2 AS LAG.

IN THE FUTURE, THE LOW-LOW LEVEL WILL TRIGGER EC-5 AS LAG INSTEAD, AND EC-2 WILL BE LAG-LAG ON A LOW-LOW-LOW LEVEL.

A FULL (HIGH) LEVEL SIGNAL AT THE TANK WILL COMMUNICATE VIA MISSION CLOUD TO THE WELL BUILDING MISSION TO COMMAND ALL PUMPS TO STOP. THE FUTURE EC-5 WILL ALSO STOP.

THE BOOSTER SKIDS WILL BE PROGRAMMED AS INLET PRESSURE CONTROLLERS. WHEN IT SENSES AN INCREASE IN PRESSURE ON ITS INLET DUE TO THE CORRESPONDING WELL SOURCE PUMPING WATER INTO IT, IT WILL AUTOMATICALLY START THE BOOSTER PUMP AND MAINTAIN THE SUCTION PRESSURE AT A DESIRED RATE. THIS WILL FILL THE TANK. EACH SKID WILL RUN INDEPENDENTLY FOR THE CORRESPONDING WELL(S).

PROVISION SHALL BE MADE TO PREVENT A RUN COMMAND ON ANY WELL IF ITS CORRESPONDING BOOSTER SKID IS OFF-LINE. PROVISION SHALL BE MADE TO ALLOW OPERATOR MANUAL CONTROL OF EACH WELL AND EACH BOOSTER SKID RUN COMMAND, AS WELL AS ALL ALARMS, STATUSES, AND PROCESS VALUES AS PROVIDED FOR IN THE DRAWINGS.

I/O SCHEDULE - WELL HOUSE

TYPE	I/O NUMBER	PREFIX	NUMBER	DESCRIPTION	NARRATIVE
DI	DI-01	YA	001	FAULT	WELL FAULT ALARM
DI	DI-02	YA	002	FAULT	WELL FAULT ALARM
DI	DI-03	XS	001	MOTOR SWITCH	WELL 1 RUNNING STATUS
DI	DI-04	XS	002	MOTOR SWITCH	WELL 2 RUNNING STATUS
DI	DI-05	PS	001	PRESSURE SWITCH	HIGH PRESSURE ALARM
DI	DI-06	PS	002	PRESSURE SWITCH	HIGH PRESSURE ALARM
DI	DI-07	LA	001	LEVEL SWITCH	LOW WELL LEVEL ALARM
DI	DI-08	LA	002	LEVEL SWITCH	LOW WELL LEVEL ALARM
DI	DI-09	ZSO	001	LIMIT SWITCH	VALVE OPEN STATUS
DI	DI-10	ZSO	002	LIMIT SWITCH	VALVE OPEN STATUS
DI	DI-11	YA	003	POWER ALARM	POWER QUALITY ALARM
DI	DI-12	NS	001	INTRUSION SWITCH	INTRUSION STATUS
DI	DI-13	FE	001	FLOW ELEMENT	FLOW TOTALIZED
DI	DI-14	FE	002	FLOW ELEMENT	FLOW TOTALIZED
DI	DI-15	LS	001	LEVEL SWITCH	FLOOD SWITCH ALARM
DO	DO-01	XC	001	RUN COMMAND	EC-1 WELL RUN COMMAND
DO	DO-02	XC	002	RUN COMMAND	EC-2 WELL RUN COMMAND
AI	A1-01	PT	001	PRESSURE TRANSMITTER	PRESSURE VALUE
AI	A1-02	PT	002	PRESSURE TRANSMITTER	PRESSURE VALUE
AI	A1-03	FIT	001	FLOW TRANSMITTER 1	FLOW VALUE
AI	A1-04	FIT	002	FLOW TRANSMITTER 2	FLOW VALUE
AI	A1-05	TT	001	TEMP TRANSMITTER	TEMPERATURE VALUE
AI	A1-06	LT	001	LEVEL TRANSDUCER	WELL LEVEL
AI	A1-07	LT	002	LEVEL TRANSDUCER	WELL LEVEL
	COMM		001	CELLUALR ANTENNA	

NOTES

1. 0 ANALOG OUTPUTS ONBOARD, EXPANDABLE TO 4 WITH PN OP461
2. 8 DIGITAL INPUTS ONBOARD, EXPANDABLE TO 16 WITH PN OP653
3. 2 ANALOG INPUTS ONBOARD, EXPANDABLE TO 9 WITH PN OP465
4. 3 DIGITAL OUTPUTS ONBOARD, EXPANDABLE TO 9 WITH PN OP654

CONTROL NARRATIVE

A LOW LEVEL SIGNAL AT THE TANK WILL COMMUNICATE VIA MISSION CLOUD TO THE WELL BUILDING MISSION TO COMMAND A START ON WELL EC-1 AS LEAD.

A LOW-LOW LEVEL SIGNAL AT THE TANK WILL COMMUNICATE VIA MISSION CLOUD TO THE WELL BUILDING MISSION TO COMMAND A START ON WELL EC-2 AS LAG.

IN THE FUTURE, THE LOW-LOW LEVEL WILL TRIGGER EC-5 AS LAG INSTEAD, AND EC-2 WILL BE LAG-LAG ON A LOW-LOW-LOW LEVEL.

A FULL (HIGH) LEVEL SIGNAL AT THE TANK WILL COMMUNICATE VIA MISSION CLOUD TO THE WELL BUILDING MISSION TO COMMAND ALL PUMPS TO STOP. THE FUTURE EC-5 WILL ALSO STOP.

THE BOOSTER SKIDS WILL BE PROGRAMMED AS INLET PRESSURE CONTROLLERS. WHEN IT SENSES AN INCREASE IN PRESSURE ON ITS INLET DUE TO THE CORRESPONDING WELL SOURCE PUMPING WATER INTO IT, IT WILL AUTOMATICALLY START THE BOOSTER PUMP AND MAINTAIN THE SUCTION PRESSURE AT A DESIRED RATE. THIS WILL FILL THE TANK. EACH SKID WILL RUN INDEPENDENTLY FOR THE CORRESPONDING WELL(S).

PROVISION SHALL BE MADE TO PREVENT A RUN COMMAND ON ANY WELL IF ITS CORRESPONDING BOOSTER SKID IS OFF-LINE. PROVISION SHALL BE MADE TO ALLOW OPERATOR MANUAL CONTROL OF EACH WELL AND EACH BOOSTER SKID RUN COMMAND, AS WELL AS ALL ALARMS, STATUSES, AND PROCESS VALUES AS PROVIDED FOR IN THE DRAWINGS.

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COBABE RANCH AND EDEN CROSSING
WELL HOUSE AND BOOSTER STATION

PWS. (NO. 29132)
EDEN, UTAH

PROFESSIONAL ENGINEER
11573207-2202
ROBERT J. HILLYER
01/23/25
STATE OF UTAH

PERMIT SET 7/23/2025

ELECTRICAL SCHEDULES

PROJECT NUMBER	PRINT DATE
14018B	7-14-2025
PROJECT MANAGER	DESIGNED BY
-	B. HILLYER

E-002

HEATH Engineering Company

LIGHTING FIXTURE SCHEDULE

TYPE	MANUFACTURER	CATALOG NUMBER	DESCRIPTION	SOURCE			ELECTRICAL		NOTES
				LUMENS	CCT	CRI	WATTS	VOLTS	
F1	LITHONIA	FEM L48 6000LM IMAFD WD MVOLT GZ10 50K 80CRI	GASKETED INDUSTRIAL, 48" LINEAR, ACRYLIC, DEEP FROSTED LENS, WIDE DISTRIBUTION, 0-10V DIMMING	6000	5000K	80+	38	120-277	1,5
F1E	LITHONIA	FEM L48 6000LM IMAFD WD MVOLT GZ10 50K 80CRI E10WMCP	GASKETED INDUSTRIAL, 48" LINEAR, ACRYLIC, DEEP FROSTED LENS, WIDE DISTRIBUTION, 0-10V DIMMING, EMERGENCY BATTERY PACK	6000	5000K	80+	38	120-277	1,5
F2	LITHONIA	FEM L48 8000LM IMAFD WD MVOLT GZ10 50K 80CRI	GASKETED INDUSTRIAL, 48" LINEAR, ACRYLIC, DEEP FROSTED LENS, WIDE DISTRIBUTION, 0-10V DIMMING	8000	5000K	80+	50	120-277	2,5
F3			SAME FIXTURE AS TYPE F1 WITH DIFFERENT MOUNTING, SEE NOTES						2,5
F3E			SAME FIXTURE AS TYPE F1E WITH DIFFERENT MOUNTING, SEE NOTES						2,5
F4	LITHONIA	WST LED P1 30K VW MVOLT PE DDBXD	LED WALL PACK, DIE CAST ALUMINUM HOUSING, GLASS LENS, DARK BRONZE FINISH, WIDE DISTRIBUTION, PHOTOELECTRIC CELL BUTTON TYPE	1500	3000K	70	12	120	3,6
F5			SAME FIXTURE AS TYPE F4 WITH DIFFERENT MOUNTING HEIGHT, SEE NOTES						4,6

KEYED NOTES:

1 - CHAIN HANG AT 9'-0" A.F.F. UNLESS OTHERWISE NOTED.

2 - CEILING MOUNT AT 9'-0" A.F.F. UNLESS OTHERWISE NOTED.

3 - WALL MOUNT AT 8'-6" A.F.F. UNLESS OTHERWISE NOTED.

4 - WALL MOUNT AT 12'-0" A.F.F. UNLESS OTHERWISE NOTED.

5 - FIXTURE BY LITHONIA, METALUX, DAY-BRITE ORACLE, COLUMBIA, HIGH5LED, HE WILLIAMS OR BEGHELLI. EQUAL DISTRIBUTION, LUMENS, AND SPECIFICATIONS.

6 - FIXTURE BY LITHONIA, MCGRAW-EDISON, GARDCO, LSI, BEACON, LUMINOS GLOBAL, LUMARK OR RAYON. EQUAL DISTRIBUTION, LUMENS, AND SPECIFICATIONS.

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PROFESSIONAL ENGINEER
11573207-2202
ROBERT J. HILLYER
07/23/25
STATE OF UTAH

PERMIT SET 7/23/2025

ELECTRICAL SCHEDULES

PROJECT NUMBER 14018B
PRINT DATE 7-14-2025
PROJECT MANAGER -
DESIGNED BY B. HILLYER

E-003

HEATH Engineering Company

PANEL L

VOLTAGE:	208/120 V 3Ø 4W	BUS AMPS:	125
ENCLOSURE:	NEMA 3R	MLO	
CIRCUIT BREAKER TYPE:	BOLT-ON	MOUNTING:	SURFACE
INTERRUPTING CAPACITY:	10 KAIC	COVER TYPE:	HINGED COVER
		LOCATION:	AS INDICATED

BRANCH CIRCUIT BREAKER				CONNECTION	DESCRIPTION	PHASE			DESCRIPTION	CONNECTION	BRANCH CIRCUIT BREAKER			
NOTES	#	AMP	P.	LOAD (VA)		A	B	C		LOAD (VA)	P.	AMP	#	NOTES
	1	35	3	2040	WELL PUMP 1	2220			EXHAUST FAN EF-2	180	1	20	2	
	3	--	--	2040	------		3540		WALL HEATER WH-2	1500	2	20	4	
	5	--	--	2040	------			3540	------	1500	--	--	6	
	7	20	1	76	WELL INTERIOR LIGHTING	1576			WALL HEATER WH-3	1500	2	20	8	
	9	20	1	12	WELL EXTERIOR LIGHTING		1512		------	1500	--	--	10	
	11	20	1	500	MISSION RTU			500	SPARE		1	20	12	
	13	35	3	2040	WELL PUMP 2	2190			FLOW TRANSMITTER	150	1	20	14	
	15	--	--	2040	------		2190		FLOW TRANSMITTER	150	1	20	16	
	17	--	--	2040	------			2040	SPARE		2	25	18	
	19	20	1	720	RECEPTACLES	720			------		--	--	20	
	21	20	1	50	WELL 1 LEVEL CONTROLLER		50		SPARE		2	20	22	
	23	20	1	50	WELL 2 LEVEL CONTROLLER			50	------		--	--	24	
	25	20	1	50	PRESSURE CONTROLLER	50			SPARE		1	20	26	
	27	20	1	50	PRESSURE CONTROLLER		50		SPARE		1	20	28	
	29	35	3		SPARE			0	SPARE		1	20	30	
	31	--	--		------	0			SPARE		1	20	32	
	33	--	--		------		0		SPARE		1	20	34	
	35	25	3		SPARE			0	SPARE		1	20	36	
	37	--	--		------	0			SPARE		1	20	38	
	39	--	--		------		0		SPARE		1	20	40	
	41	20	1		SPARE			0	SPARE		1	20	42	
					PHASE SUBTOTALS (VA)	6756	7342	6130						
					PHASE TOTALS (KVA)	6.8	7.3	6.1						
					PHASE TOTALS @ 120V (AMPS)	56.3	61.2	51.1						

NOTES:	
GEN	PROVIDE WITH INTEGRAL SURGE PROTECTION
1	
2	
3	

PANEL MDP

VOLTAGE:	120/240 V 1Ø 3W	BUS AMPS:	800
ENCLOSURE:	NEMA 3R	MLO	
CIRCUIT BREAKER TYPE:	I-LINE	MOUNTING:	SURFACE
INTERRUPTING CAPACITY:	42 KAIC	COVER TYPE:	DOOR-IN-DOOR
		LOCATION:	AS INDICATED

BRANCH CIRCUIT BREAKER				CONNECTION	DESCRIPTION	PHASE			DESCRIPTION	CONNECTION	BRANCH CIRCUIT BREAKER			
NOTES	#	AMP	P.	LOAD (VA)		L1		L2		LOAD (VA)	P.	AMP	#	NOTES
	1	100	2	8762	EC-1 AND EC-2 BOOSTER	9066			PUMP ROOM LIGHTING	304	1	20	2	
	3	--	--	8762	------			8812	CHLORINATOR LIGHTING	50	1	20	4	
	5	350	2	31730	PRE-FILTER EC-5 BOOSTER	31754			EXTERIOR LIGHTING	24	1	20	6	
	7	--	--	31730	------			32270	CL2 ROOM RECEPTACLES	540	1	20	8	
	9	350	2	31730	EC-5 BOOSTER	32630			PUMP ROOM RECEPTACLES	900	1	20	10	
	11	--	--	31730	------			32450	PUMP ROOM RECEPTACLES	720	1	20	12	
	13	20	2	432	DOSING PUMP	582			FLOW TRANSMITTER	150	1	20	14	
	15	--	--	432	------			932	MISSION RTU	500	1	20	16	
	17	20	1	180	EXHAUST FAN EF-1	180			SPARE		1	20	18	
	19	20	1	50	PHASE 1 FILTER SKID CONTROLLERS			50	SPARE		1	20	20	
	21	20	1	50	PHASE 2 FILTER SKID CONTROLLERS	50			SPARE		1	20	22	
	23	20	1	150	CHLORINE SCALE			150	SPARE		1	20	24	
	25	30	2	2500	UNIT HEATER UH-1	2500			SPARE		1	20	26	
	27	--	--	2500	------			2500	SPARE		1	20	28	
1	29	35	2	2500	AIR CONDITIONING WAC-1	2500			SPARE		1	20	30	
	31	--	--	2500	------			2500	SPARE		1	20	32	
	33	25	2	2000	WALL HEATER WH-1	2000			SPARE		1	20	34	
	35	--	--	2000	------			2000	SPARE		1	20	36	
	37	25	2		SPARE	0			SPARE		1	20	38	
	39	--	--		------			0	SPARE		1	20	40	
	41	20	1		SPARE	0			SPARE		1	20	42	
					PHASE SUBTOTALS (VA)	81262		81664						
					PHASE TOTALS (KVA)	81.3		81.7						
					PHASE TOTALS @ 120V (AMPS)	677.2		680.5						

NOTES:	
G	PROVIDE WITH INTEGRAL SURGE PROTECTOR
1	LOAD SHOWN IN HEAT MODE, WORST-CASE OVERALL. WAC-1 IN A/C MODE IS 3168KVA PER PHASE
2	
3	

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COBABE RANCH AND EDEN CROSSING WELL HOUSE AND BOOSTER STATION

PWS. (NO. 29132)
EDEN, UTAH

PROFESSIONAL ENGINEER
11573207-2202
ROBERT J. HILLYER
01/23/25
STATE OF UTAH

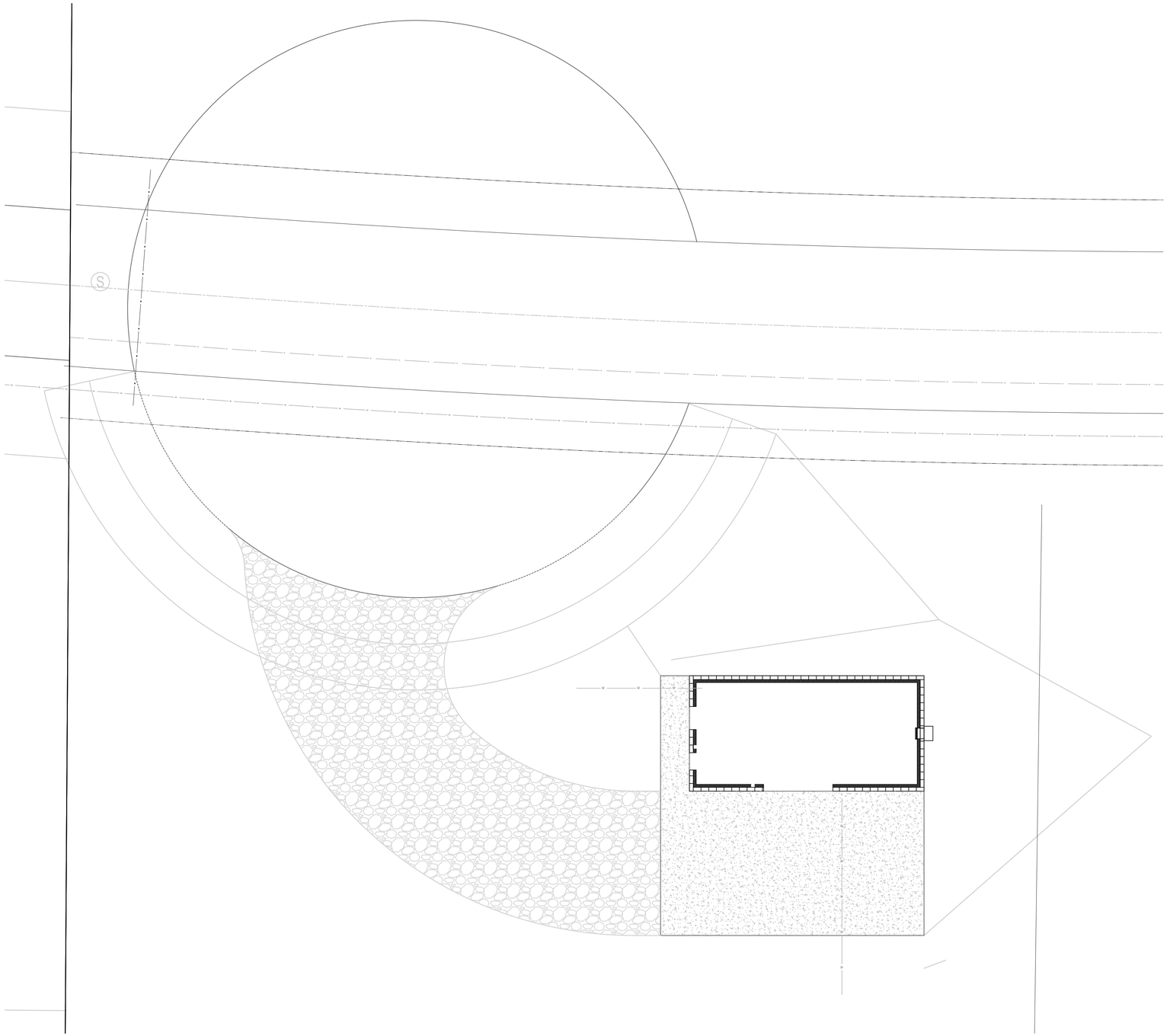
PERMIT SET 7/23/2025

ELECTRICAL SCHEDULES

PROJECT NUMBER	PRINT DATE
14018B	7-14-2025
PROJECT MANAGER	DESIGNED BY
-	B. HILLYER

E-004

HEATH Engineering Company



GENERAL NOTES

A. COORDINATION WITH CIVIL AND THE UTILITY WILL BE REQUIRED TO DETERMINE EXACT TRANSFORMER LOCATION AND ROUTING OF PRIMARY AND SECONDARY SERVICE. FINAL TRANSFORMER PLACEMENT TO BE CONFIRMED PRIOR TO CONSTRUCTION. COORDINATE CONDUIT ROUTING TO BUILDING. CONTRACTOR SHALL COORDINATE EXACT CONDUIT PATH FROM BUILDING TO TRANSFORMER WITH SITE CONDITIONS AND OTHER TRADES. CONFIRM PATH TO AVOID CONFLICTS WITH EXISTING UTILITIES, LANDSCAPING, AND SITE GRADING. PROVIDE PULL BOXES OR HANDHOLES AS NEEDED FOR WIRE PULL. VERIFY TRENCH ROUTE AND DEPTH WITH CIVIL/LANDSCAPE PLANS PRIOR TO EXCAVATION. SEE TRENCHING DETAIL. NOTIFY ENGINEER OF ANY SITE CONSTRAINTS OR OBSTRUCTIONS BEFORE INSTALLATION.

1 E-100 **BOOSTER BUILDING SITE ELECTRICAL PLAN**

SCALE: 1"=10'-0"

10 5 0 10 20

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PROFESSIONAL ENGINEER
11573207-2202
ROBERT J. HILLYER
01/23/25
STATE OF UTAH

PERMIT SET 7/23/2025

BOOSTER BUILDING SITE ELECTRICAL PLAN

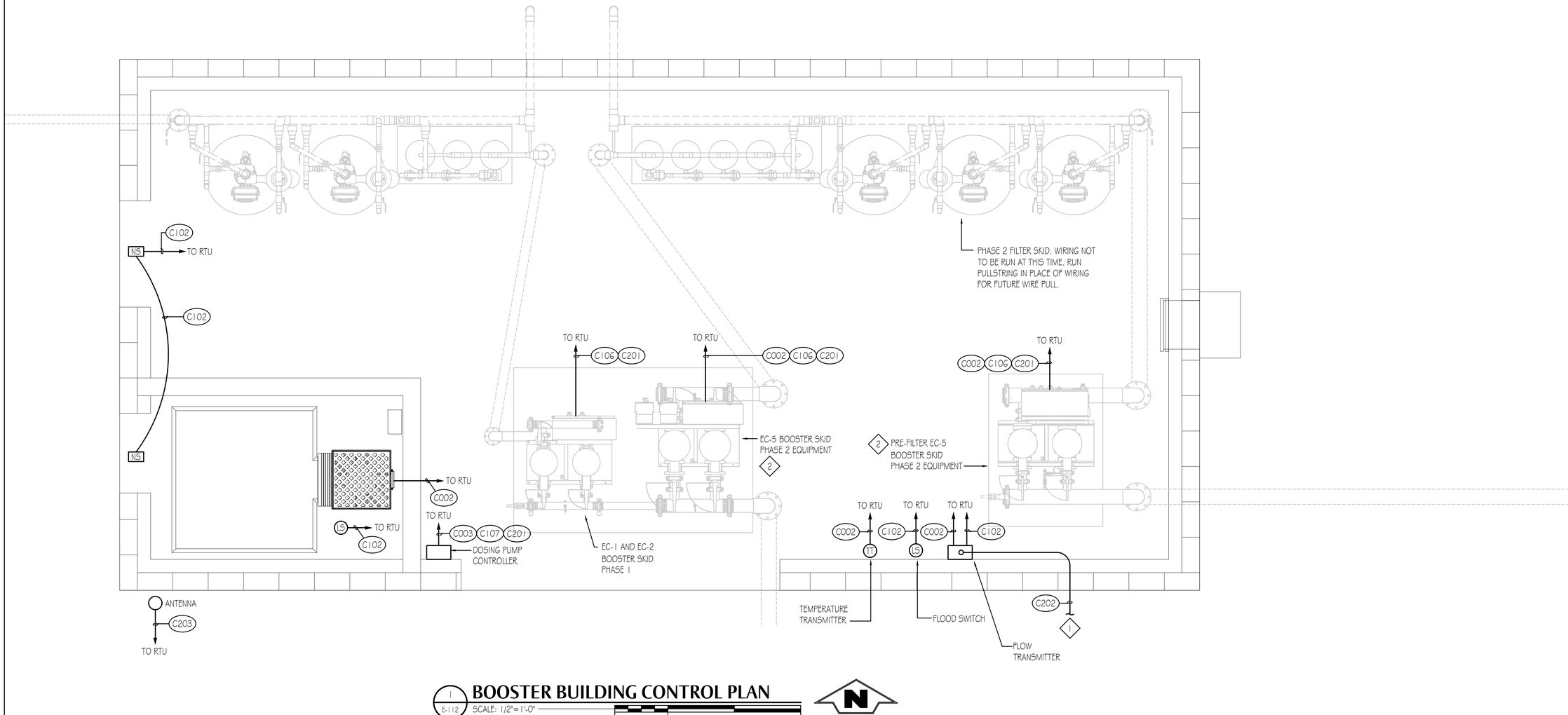
PROJECT NUMBER	PRINT DATE
14016B	7-14-2025
PROJECT MANAGER	DESIGNED BY
-	B. HILLYER

E-100

HEATH Engineering Company

DRAWING NOTES

1. CONDUIT TO STUB UP AND BE CAPPED WATERTIGHT FOR FUTURE USE. SEAL CAP TO PREVENT INGRESS OF MOISTURE, DEBRIS, AND INSECTS. COORDINATE CONDUIT ROUTING WITH CIVIL FOR FUTURE FLOW METER LOCATION IN VAULT. VERIFY TRENCH ROUTE AND DEPTH WITH CIVIL/LANDSCAPE PLANS PRIOR TO EXCAVATION. SEE TRENCHING DETAIL.
2. WIRING NOT TO BE RUN AT THIS TIME. RUN PULLSTRING IN PLACE OF WIRING FOR FUTURE WIRE PULL.



1 / E-112 **BOOSTER BUILDING CONTROL PLAN**
SCALE: 1/2"= 1'-0"
2 0 5

N

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ROBERT J. HILLYER
07/23/25
STATE OF UTAH

PERMIT SET 7/23/2025

BOOSTER BUILDING CONTROL PLAN

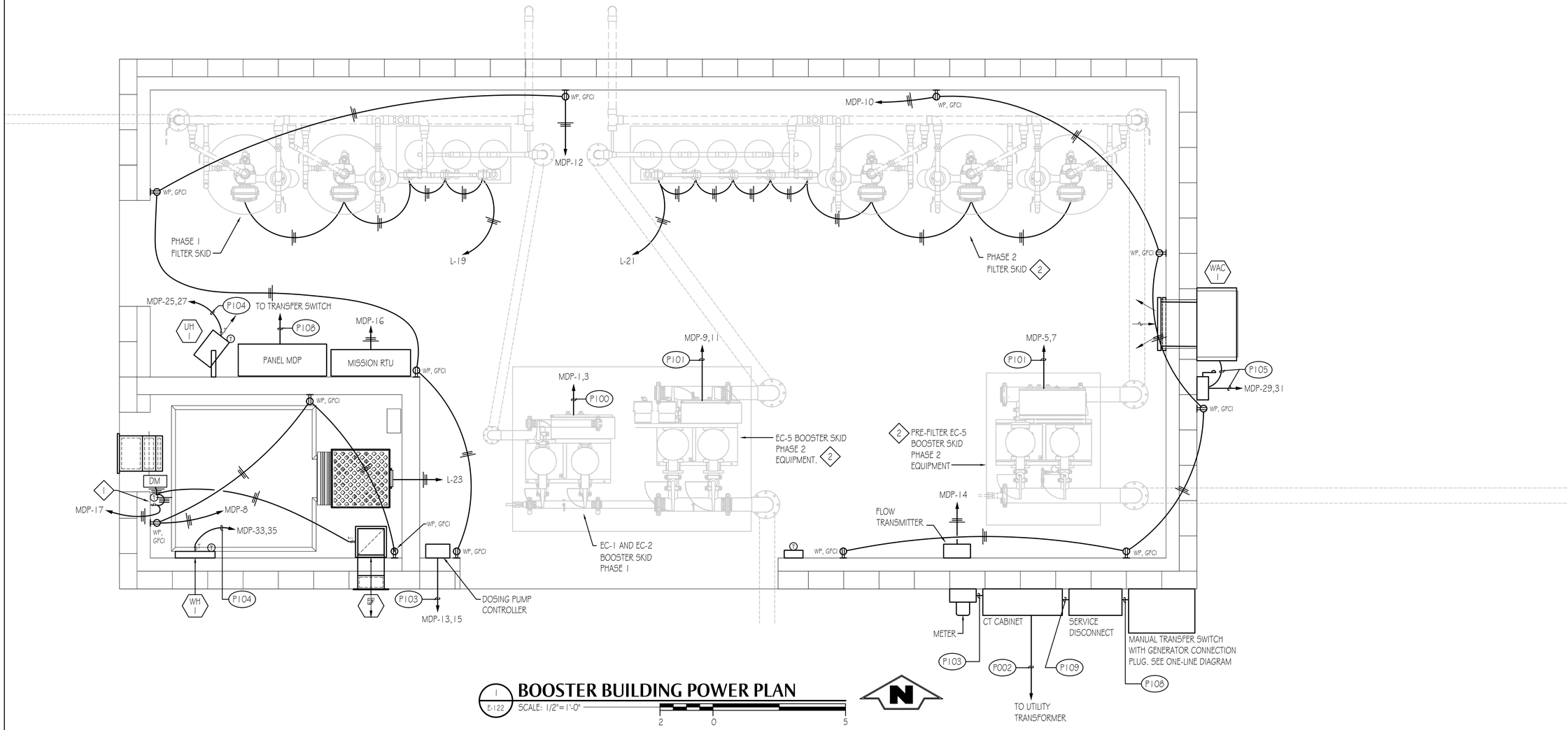
PROJECT NUMBER	PRINT DATE
14018B	7-14-2025
PROJECT MANAGER	DESIGNED BY
-	B. HILLYER

E-112

HEATH Engineering Company

DRAWING NOTES

1. EXHAUST FAN MANUAL DIAL BATHROOM STYLE HEAVY DUTY TIMER SWITCH.
2. WIRING NOT TO BE RUN AT THIS TIME. RUN PULLSTRING IN PLACE OF WIRING FOR FUTURE WIRE PULL.



1 E-122 **BOOSTER BUILDING POWER PLAN**

SCALE: 1/2"= 1'-0" (2 0 5)

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COBABE RANCH AND EDEN CROSSING WELL HOUSE AND BOOSTER STATION

PWS. (NO. 29132)
EDEN, UTAH

PROFESSIONAL ENGINEER
11573207-2202
ROBERT J. HILLYER
01/23/25
STATE OF UTAH

PERMIT SET 7/23/2025

BOOSTER BUILDING POWER PLAN

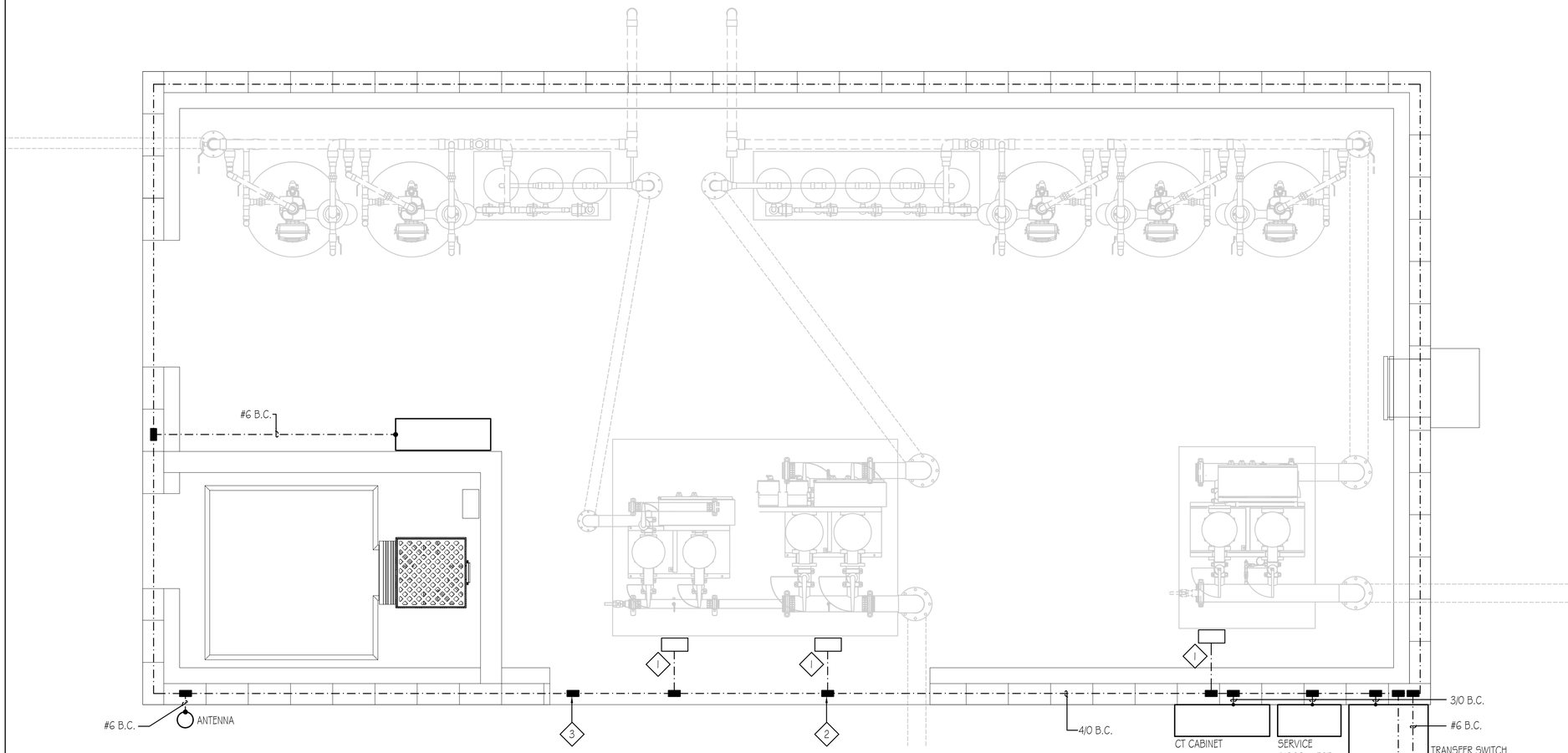
PROJECT NUMBER	PRINT DATE
14018B	7-14-2025
PROJECT MANAGER	DESIGNED BY
-	B. HILLYER

E-122

HEATH Engineering Company

DRAWING NOTES

1. SEE GROUND INSERT DETAIL 5/ E-503.
2. EXOTHERMIC WELD, TYP.
3. BOND TO FOUNDATION REBAR (NON EPOXY COATED) TO CREATE UFER GROUND. TIE ALL REBAR TOGETHER FOR ELECTRICAL CONTINUITY.



1 / E-124 BOOSTER BUILDING GROUNDING PLAN

SCALE: 1/2"= 1'-0"

2 0 5

N

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COBABE RANCH AND EDEN CROSSING WELL HOUSE AND BOOSTER STATION

PWS. (NO. 29132)
EDEN, UTAH

PROFESSIONAL ENGINEER
11573207-2202
ROBERT J. HILLYER
01/23/25
STATE OF UTAH

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BOOSTER BUILDING GROUNDING PLAN

PROJECT NUMBER	PRINT DATE
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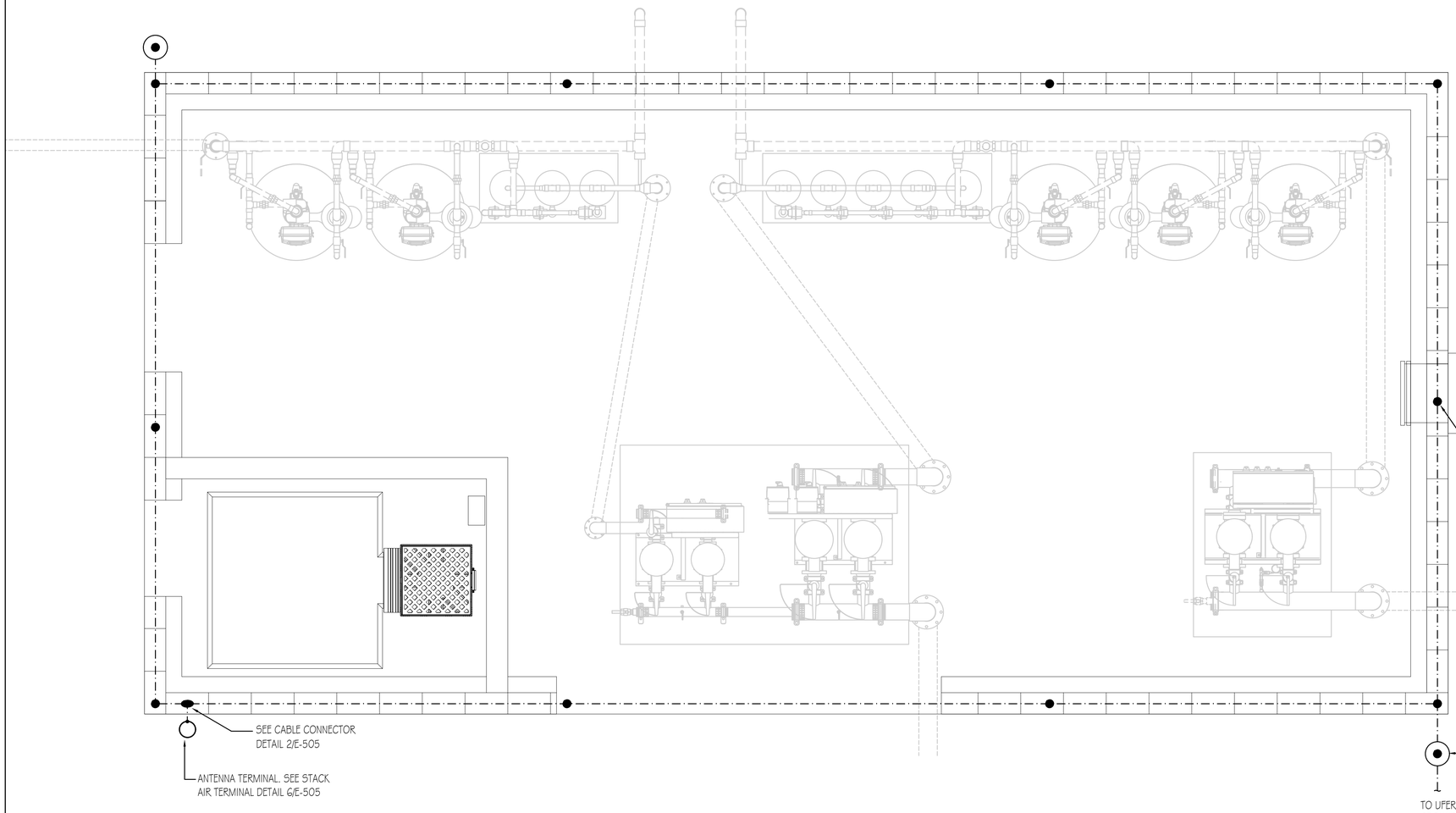
PROJECT MANAGER	DESIGNED BY
-	B. HILLYER

E-124

HEATH Engineering Company



1 / E-126 **BOOSTER BUILDING LIGHTNING PROTECTION PLAN**

SCALE: 1/2" = 1'-0"

2 0 5

N

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BOOSTER BUILDING LIGHTNING PROTECTION PLAN

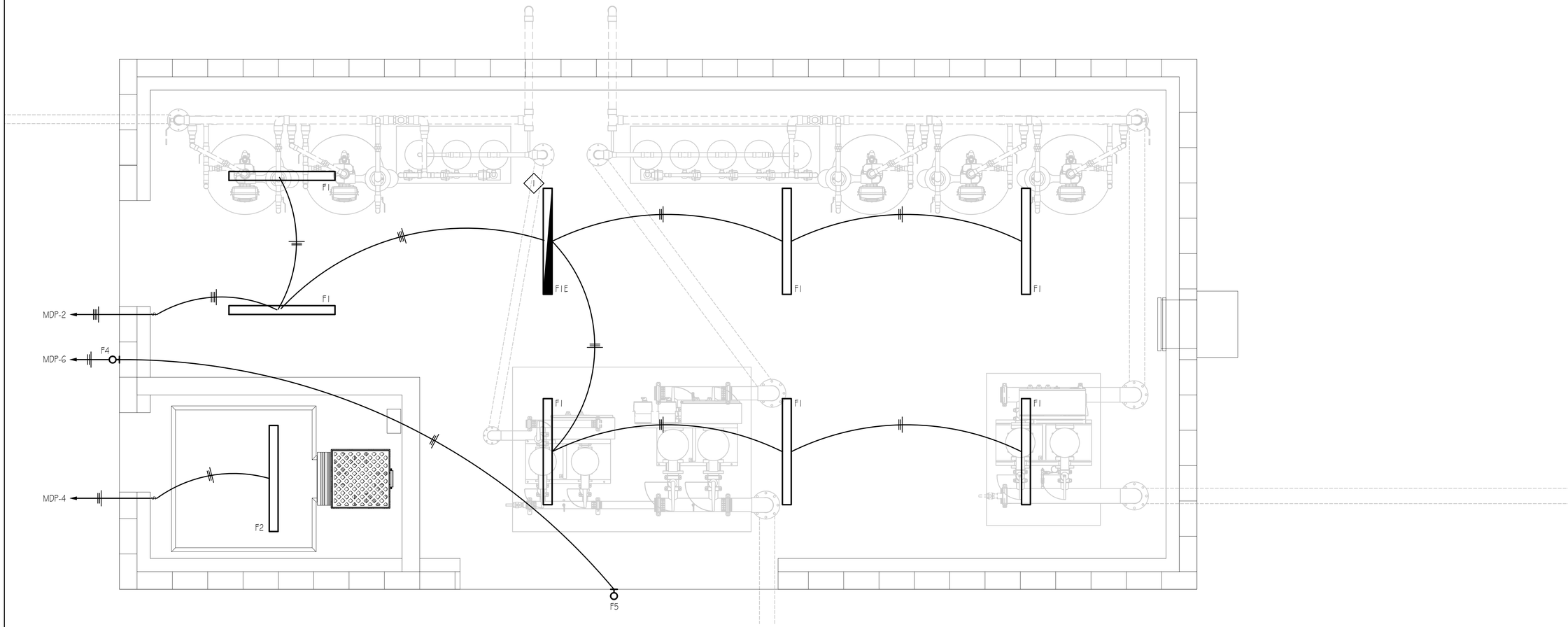
PROJECT NUMBER	PRINT DATE
14018B	7-14-2025
PROJECT MANAGER	DESIGNED BY
-	B. HILLYER

E-126

HEATH Engineering Company

DRAWING NOTES

1. PROVIDE FIXTURE WITH AN UNSWITCHED HOT FOR THE EMERGENCY BATTERY PACK.



1 / E-128 BOOSTER BUILDING LIGHTING PLAN

SCALE: 1/2"= 1'-0"

2 0 5

N

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BOOSTER BUILDING LIGHTING PLAN

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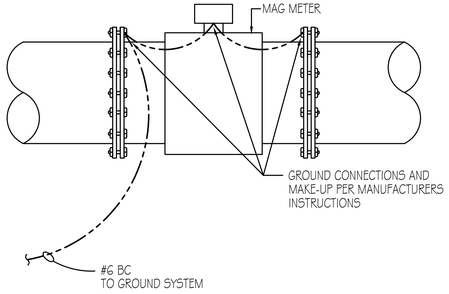
PROJECT MANAGER	DESIGNED BY
-	B. HILLYER

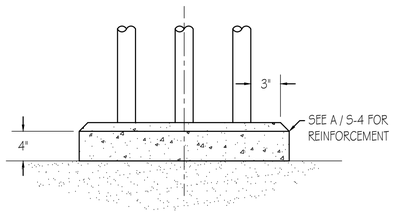
E-128

HEATH Engineering Company



7 E-501 FLOW METER GROUND RING CONNECTION

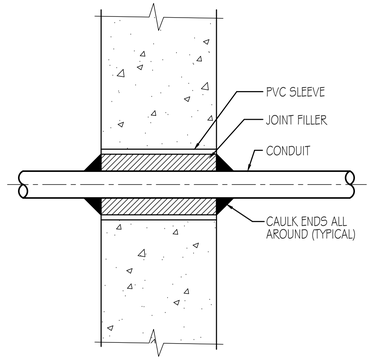
SCALE: NONE



HOUSEKEEPING CURB REQUIRED AT ALL INTERIOR WALL LOCATIONS FOR SINGLE AND MULTIPLE RISERS. RISERS SHALL BE COUPLED SO THAT SINGLE RISERS ARE SIX FEET APART MIN.

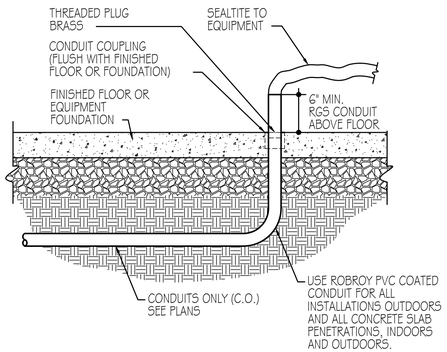
4 E-501 CONCRETE HOUSEKEEPING CURB DETAIL

SCALE: NONE



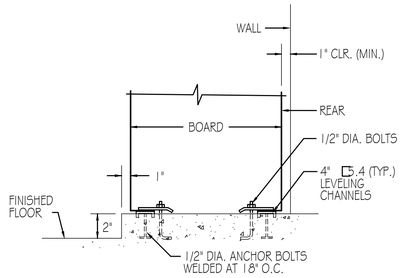
1 E-501 CONDUIT PENETRATION AT NEW WALL OR SLAB

SCALE: NONE



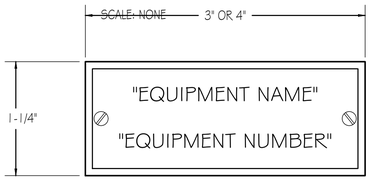
8 E-501 CONDUIT TERMINATION UNDER EQUIPMENT

SCALE: NONE



5 E-501 SWITCHBOARD MOUNTING DETAIL

SCALE: NONE

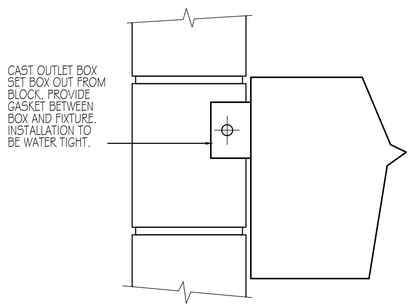


NOTES:

1. ALL LETTERS TO BE 1/4" UNLESS NOTED OTHERWISE.
2. ALL NAMEPLATES TO BE MOUNTED ON THE VERTICAL CENTERLINE OF THE CUBICAL OR DEVICE.
3. ATTACH ALL NAMEPLATES WITH STAINLESS STEEL SCREWS.
4. PROVIDE BLANK NAMEPLATES FOR ALL SPARE AND FUTURE DEVICES.

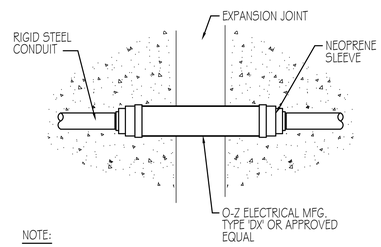
2 E-501 NAMEPLATE DETAIL

SCALE: NONE



6 E-501 WALL HUNG FIXTURE MOUNTING DETAIL

SCALE: NONE

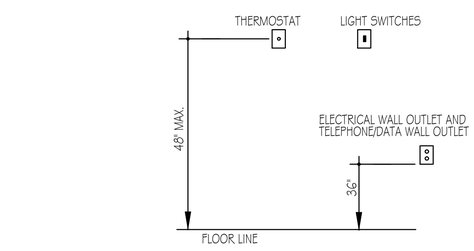


NOTE:

PROVIDE EXTERNAL BONDING JUMPER WHEN COUPLING HAS NO INTERIOR JUMPER.

3 E-501 EXPANSION COUPLING

SCALE: NONE



9 E-501 MOUNTING HEIGHTS FOR ELECTRICAL DEVICES

SCALE: NONE

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ELECTRICAL DETAILS

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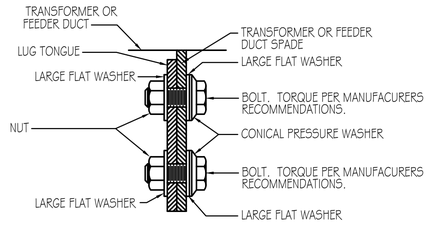
-	B. HILLYER

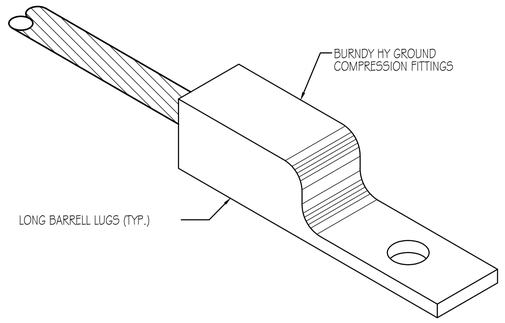
E-501

HEATH Engineering Company



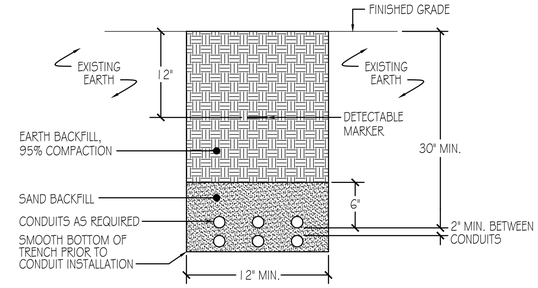
4 E-502 LUG TO SPADE CONNECTION DETAIL

SCALE: NONE



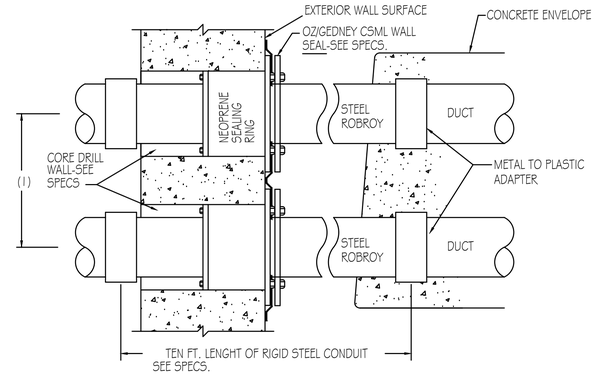
5 E-502 BONDING LUG

SCALE: NONE



1 E-502 TRENCH DETAIL-NATURAL RESTORATION

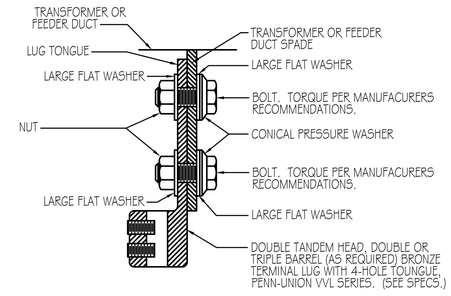
SCALE: NONE



NOTE:
(1) VERIFY WITH SEAL MANUFACTURER BEFORE DRILLING.

2 E-502 CONDUIT WALL SEAL SECTION

SCALE: NONE (TYPICAL OF ALL CONDUIT ENTERING BUILDINGS FROM EXTERIOR DUCTBANKS)



3 E-502 LUG TO SPADE CONNECTION DETAIL

SCALE: NONE

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E-502

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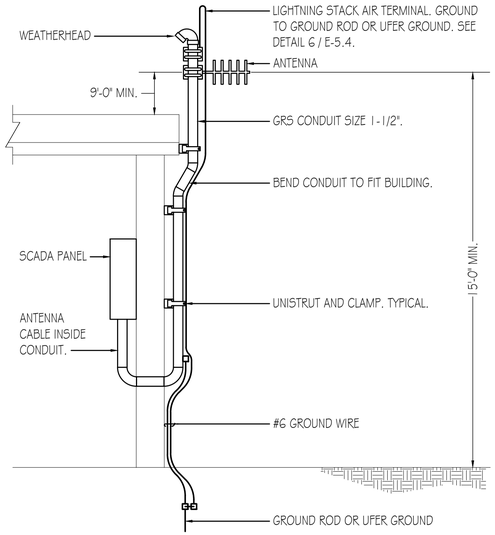
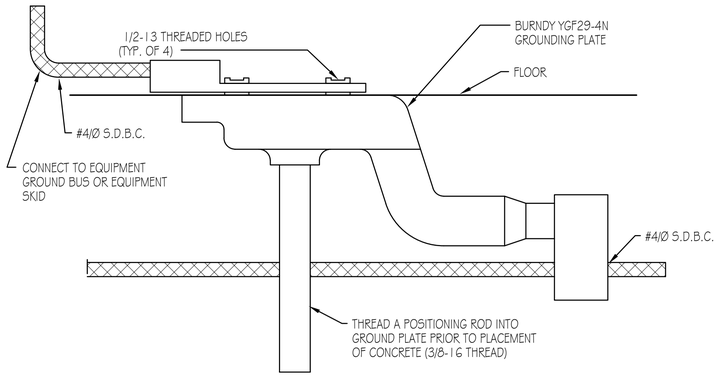


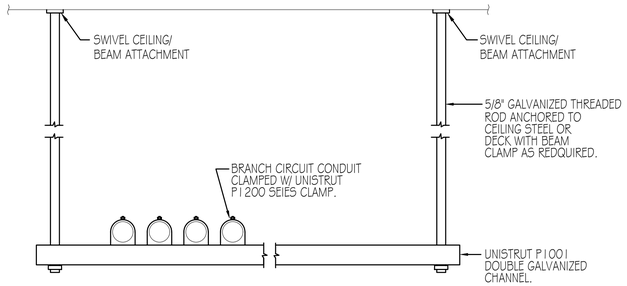
6 E-503 ANTENNA SUPPORT DETAIL

SCALE: NONE



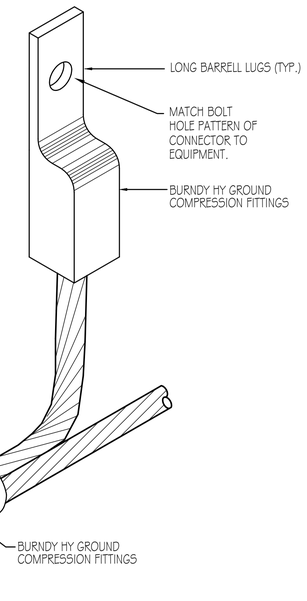
4 E-503 GROUNDING DETAIL AT TRANSFORMER PAD

SCALE: NONE



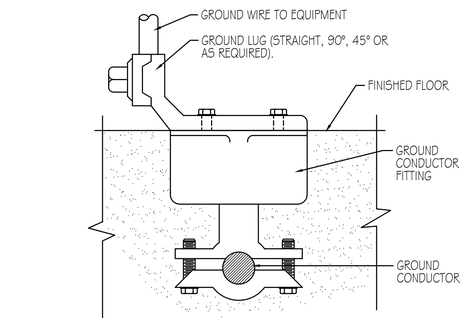
1 E-503 CONDUIT SUPPORT DETAIL

SCALE: NONE



2 E-503 EQUIPMENT GROUNDING CONNECTION

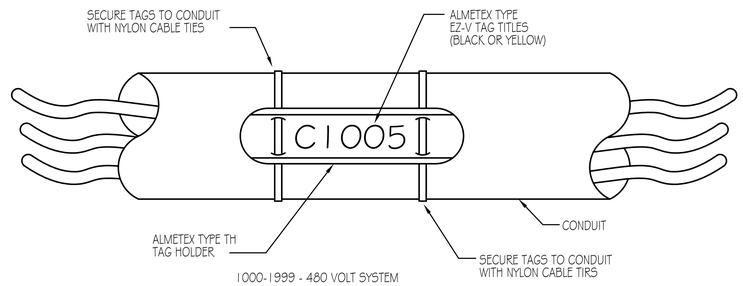
SCALE: NONE



NOTE:
BOLTS SHALL BE INSERTED IN BOLT HOLES BEFORE CONNECTOR IS EMBEDDED.

5 E-503 GROUND INSERT DETAIL

SCALE: NONE ——— TYPICAL OF ALL INTERIOR EQUIPMENT GROUNDING



1000-1999 - 480 VOLT SYSTEM

2000-2999 - 277 VOLT SYSTEM

3000-3999 - 208/120 VOLT SYSTEM

4000-4999 - INSTRUMENTATION & CONTROL SYSTEM

3 E-503 CONDUIT MARKING SYSTEM

SCALE: NONE

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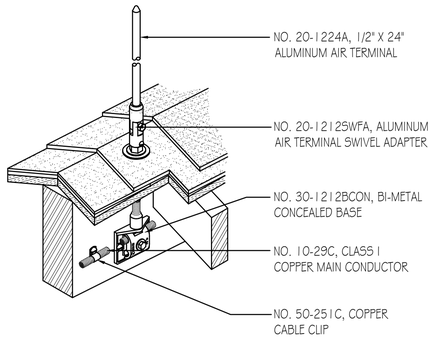
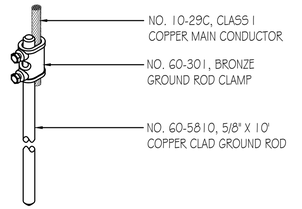
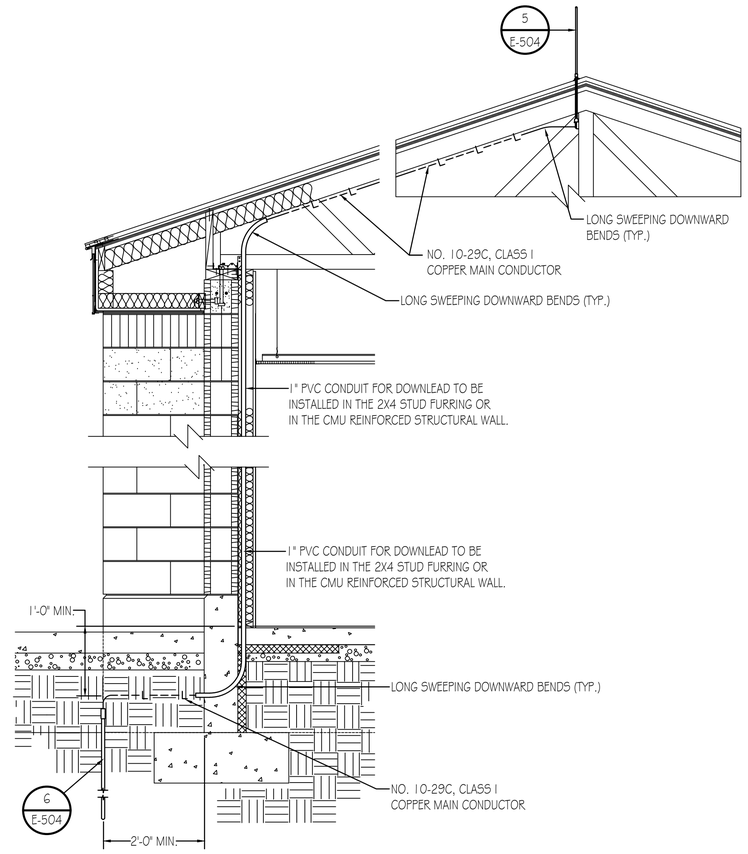
E-503



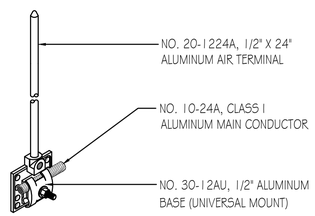
5 / E-504 RIDGE AIR TERMINAL
SCALE: NONE



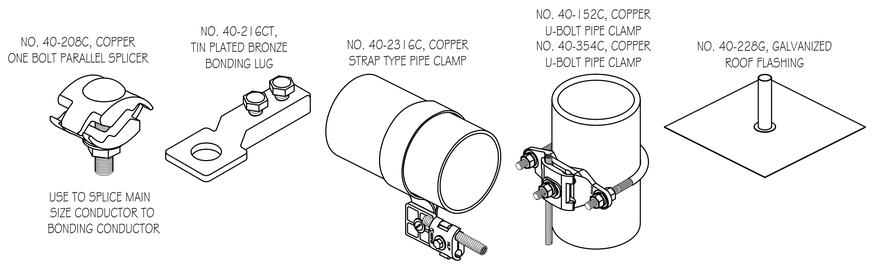
6 / E-504 GROUND ROD DETAIL
SCALE: NONE



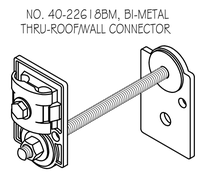
1 / E-504 TYPICAL DOWNLEAD DETAIL
SCALE: NONE



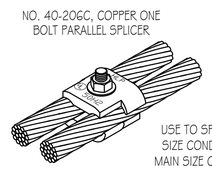
7 / E-504 STACK AIR TERMINAL
SCALE: NONE



2 / E-504 MISCELLANEOUS DETAILS
SCALE: NONE



8 / E-504 THRU-ROOF / WALL CONNECTOR
SCALE: NONE



4 / E-504 CABLE CONNECTOR
SCALE: NONE

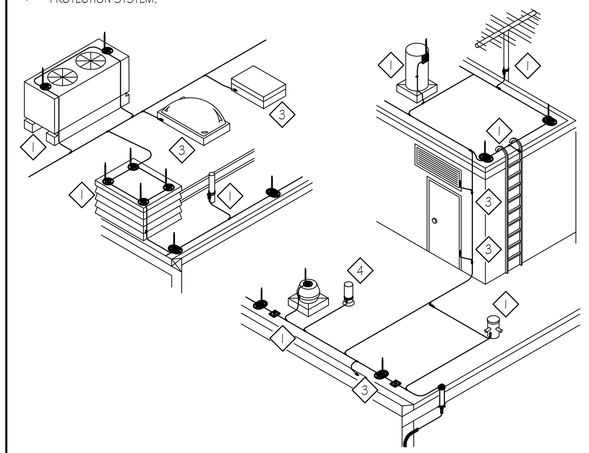
3 / E-504 STEEL CONNECTION
SCALE: NONE

GENERAL CONSTRUCTION NOTES

1. THIS DRAWING IS NOT INTENDED FOR USE AS A CONSTRUCTION DOCUMENT. FIELD VERIFY ACTUAL CONDITIONS PRIOR TO CONSTRUCTION. CONTACT ENGINEER TO CLARIFY ANY DISCREPANCIES.

GENERAL BONDING NOTES

1. TYPICAL BODIES OF CONDUCTANCE AS NOTED BELOW. USE FULL SIZE CONDUCTOR AND APPROPRIATE FITTING SHOWN FOR CONNECTION.
2. BONDING CONNECTIONS AND FITTINGS SHOWN ARE TYPICAL EXAMPLES. MAKE ALL CONNECTIONS REQUIRED TO MEET CODES AS NOTED BELOW. ADJUST FITTING TYPE AS REQUIRED TO SUIT FIELD CONDITIONS.
3. TYPICAL BODIES OF INDUCTANCE AS NOTED BELOW. USE SECONDARY SIZE (SMALLER) CONDUCTOR AND APPROPRIATE FITTING SHOWN FOR CONNECTION.
4. (PLUMBING STACK) REQUIRES BONDING WITH MAIN SIZE CABLE ONLY IF WITHIN 6'-0" (1,828mm) OF LIGHTNING PROTECTION SYSTEM.



GENERAL INSTALLATION NOTES

1. LOCATE AIR TERMINALS AS SHOWN. TAKE CARE TO INSURE THAT ALL POINTS ARE WITHIN 2'-0" (609mm) OF OUTSIDE BUILDING EDGE, OUTSIDE CORNERS, RIDGE ENDS, AND THAT MAX SPACING DOES NOT EXCEED 20'-0" (6,096mm), AND THAT MIN PROJECTION ABOVE OBJECT PROTECTED IS 10" (254mm); POINTS PROJECTING 24" (609mm) MAY BE SPACED @ 25'-0" (7,520mm) MAX.
2. MAINTAIN HORIZONTAL OR DOWNWARD COURSING OF MAIN CONDUCTOR. INSURE THAT ALL BENDS HAVE AT LEAST AN 8" (203mm) RADIUS AND DO NOT EXCEED 90 DEGREES.
3. ATTACH ALL EXPOSED ROOF, DOWN LEAD AND BONDING CABLES AT 3'-0" (914mm) ON CENTER MAX. VERIFY COMPATIBILITY OF ADHESIVE ON MEMBRANE ROOF APPLICATIONS PRIOR TO INSTALLATION.
4. GROUND ELECTRODES SHALL BE INSTALLED AS SHOWN, BUT IN NO INSTANCE SHALL THEY BE LESS THAN 1'-0" (304mm) BELOW GRADE AND 2'-0" (609mm) FROM FOUNDATION WALL. DRIVEN RODS SHALL PENETRATE THE EARTH AT LEAST 10'-0" (3,048mm).
5. BOND TO WATER SERVICE AND OTHER PIPING SYSTEMS AS SHOWN AND AS REQUIRED BY CODE.
6. INTERCONNECT LIGHTNING PROTECTION GROUND TO ELECTRIC, TELEPHONE, AND OTHER BUILDING GROUND SYSTEMS AS SHOWN OR AS REQUIRED BY CODE.
7. SYSTEM SHALL BE INSTALLED AS REQUIRED TO INSURE PROPER CODE COMPLIANCE AND SYSTEM CERTIFICATION. ANY MAJOR INSTALLATION VARIANCE SHALL BE RESUBMITTED FOR APPROVAL.
8. RECORD DOCUMENTS SHALL BE SUBMITTED IN ACCORDANCE WITH CERTIFICATION PROCEDURES.
9. ALL MATERIALS TO BE UNDERWRITER'S LABORATORIES APPROVED WITH "A" LABELS ON CONDUCTORS @ 10'-0" (3,048mm) INTERVALS AND "B" LABELS ON ALL AIR TERMINALS.
10. COMPLETED INSTALLATION SHALL BEAR U.L. MASTER LABEL "C" TO BE SECURED BY SYSTEM INSTALLER PER UL96A.
11. INSTALLATION SHALL BE MADE UNDER THE SUPERVISION OF AN L.P.I. CERTIFIED MASTER INSTALLER.

LEGEND

- AIR TERMINAL AND BASE ASSEMBLY
- MECHANICAL CONNECTION
- C — THRU-ROOF CONNECTION
- THRU-WALL CONNECTION
- L — COPPER LIGHTNING PROTECTION CONDUCTOR
- L — ALUMINUM LIGHTNING PROTECTION CONDUCTOR
- GROUND ROD
- MISCELLANEOUS BOND

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EDEN, UTAH

PROFESSIONAL ENGINEER
11573207-2202
ROBERT J. HILLYER
01/23/25
STATE OF UTAH

PERMIT SET 7/23/2025

ELECTRICAL DETAILS

PROJECT NUMBER	PRINT DATE
14018B	7-14-2025
PROJECT MANAGER	DESIGNED BY
-	B. HILLYER

E-504

HEATH Engineering Company

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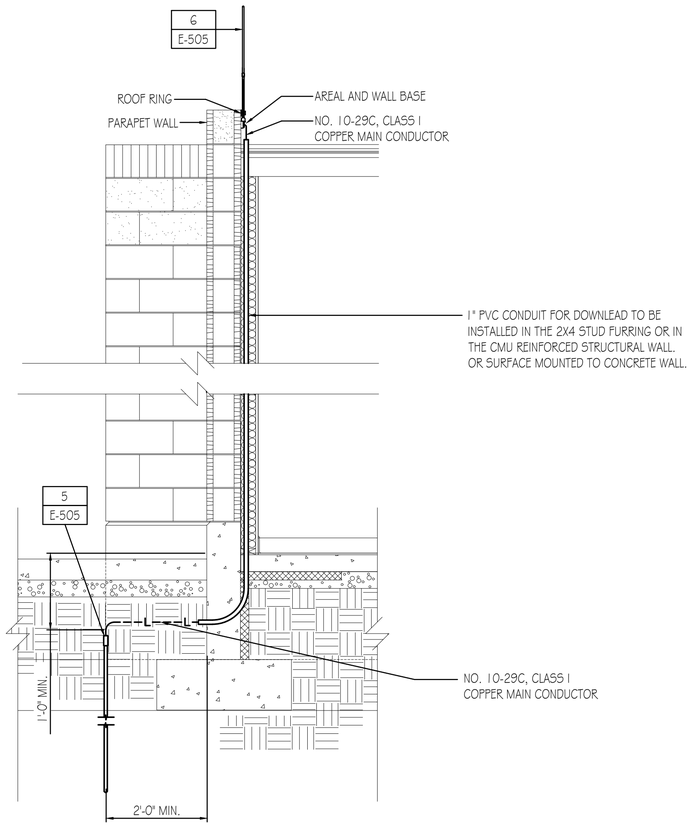
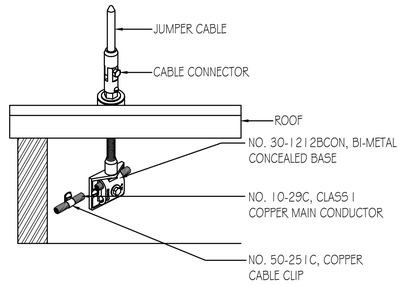


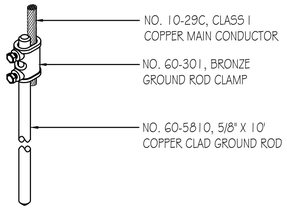
TYPICAL DOWNLEAD DETAIL

SCALE: NONE — 7 / E-505



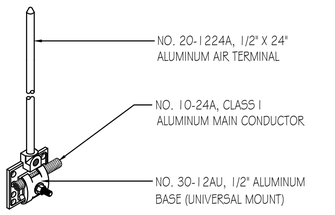
AIR TERMINAL

SCALE: NONE — 4 / E-505



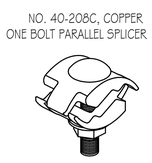
GROUND ROD DETAIL

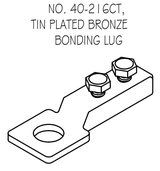
SCALE: NONE — 5 / E-505

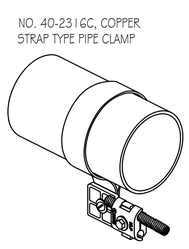


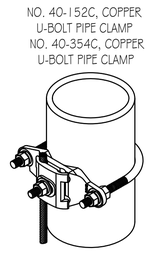
STACK AIR TERMINAL

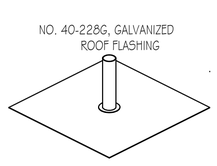
SCALE: NONE — 6 / E-505









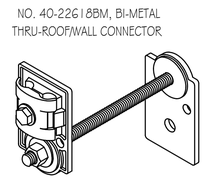


MISCELLANEOUS DETAILS

SCALE: NONE — 8 / E-505

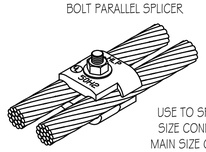
LEGEND

- AIR TERMINAL AND BASE ASSEMBLY
- MECHANICAL CONNECTION
- C THRU-ROOF CONNECTON
- THRU-WALL CONNECTION
- L ~~COPPER~~ LIGHTNING PROTECTION CONDUCTOR
- ~~ALUM~~INUM LIGHTNING PROTECTION CONDUCTOR
- GROUND ROD
- MISCELLANEOUS BOND



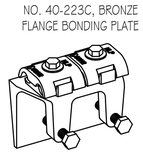
THRU-ROOF/WALL CONNECTOR

SCALE: NONE — 1 / E-505



CABLE CONNECTOR

SCALE: NONE — 2 / E-505



STEEL CONNECTION

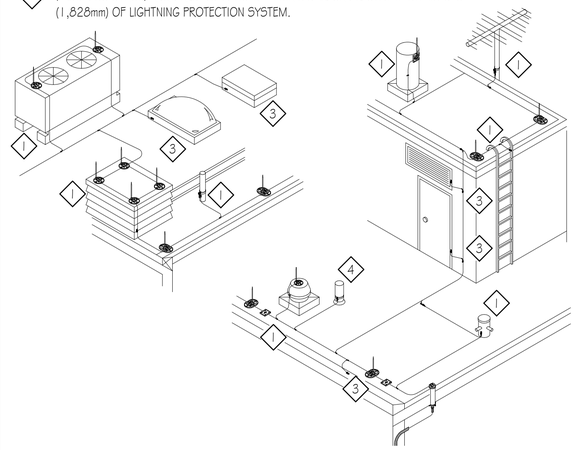
SCALE: NONE — 3 / E-505

GENERAL CONSTRUCTION NOTES

1. THIS DRAWING IS INTENDED FOR USE AS A CONSTRUCTION DOCUMENT. FIELD VERIFY ACTUAL CONDITIONS PRIOR TO CONSTRUCTION. CONTACT ENGINEER TO CLARIFY ANY DISCREPANCIES.

GENERAL BONDING NOTES

1. TYPICAL BODIES OF CONDUCTANCE AS NOTED BELOW. USE FULL SIZE CONDUCTOR AND APPROPRIATE FITTING SHOWN FOR CONNECTION.
2. BONDING CONNECTIONS AND FITTINGS SHOWN ARE TYPICAL EXAMPLES. MAKE ALL CONNECTIONS REQUIRED TO MEET CODES AS NOTED BELOW. ADJUST FITTING TYPE AS REQUIRED TO SUIT FIELD CONDITIONS.
3. TYPICAL BODIES OF INDUCTANCE AS NOTED BELOW. USE SECONDARY SIZE (SMALLER) CONDUCTOR AND APPROPRIATE FITTING SHOWN FOR CONNECTION.
4. (PLUMBING STACK) REQUIRES BONDING WITH MAIN SIZE CABLE ONLY IF WITHIN 6'-0" (1,828mm) OF LIGHTNING PROTECTION SYSTEM.



GENERAL INSTALLATION NOTES

1. LOCATE AIR TERMINALS AS SHOWN. TAKE CARE TO INSURE THAT ALL POINTS ARE WITHIN 2'-0" (609mm) OF OUTSIDE BUILDING EDGE, OUTSIDE CORNERS, RIDGE ENDS, AND THAT MAX SPACING DOES NOT EXCEED 20'-0" (6,096mm), AND THAT MIN PROJECTION ABOVE OBJECT PROTECTED IS 10" (254mm); POINTS PROJECTING 24" (609mm) MAY BE SPACED @ 25'-0" (7,520mm) MAX.
2. MAINTAIN HORIZONTAL OR DOWNWARD COURSING OF MAIN CONDUCTOR. INSURE THAT ALL BENDS HAVE AT LEAST AN 8" (203mm) RADIUS AND DO NOT EXCEED 90 DEGREES.
3. ATTACH ALL EXPOSED ROOF, DOWN LEAD AND BONDING CABLES AT 3'-0" (914mm) ON CENTER MAX. VERIFY COMPATIBILITY OF ADHESIVE ON MEMBRANE ROOF APPLICATIONS PRIOR TO INSTALLATION.
4. GROUND ELECTRODES SHALL BE INSTALLED AS SHOWN, BUT IN NO INSTANCE SHALL THEY BE LESS THAN 1'-0" (304mm) BELOW GRADE AND 2'-0" (609mm) FROM FOUNDATION WALL. DRIVEN RODS SHALL PENETRATE THE EARTH AT LEAST 10'-0" (3,048mm).
5. BOND TO WATER SERVICE AND OTHER PIPING SYSTEMS AS SHOWN AND AS REQUIRED BY CODE.
6. INTERCONNECT LIGHTNING PROTECTION GROUND TO ELECTRIC, TELEPHONE, AND OTHER BUILDING GROUND SYSTEMS AS SHOWN OR AS REQUIRED BY CODE.
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11. INSTALLATION SHALL BE MADE UNDER THE SUPERVISION OF AN L.P.I. CERTIFIED MASTER INSTALLER.

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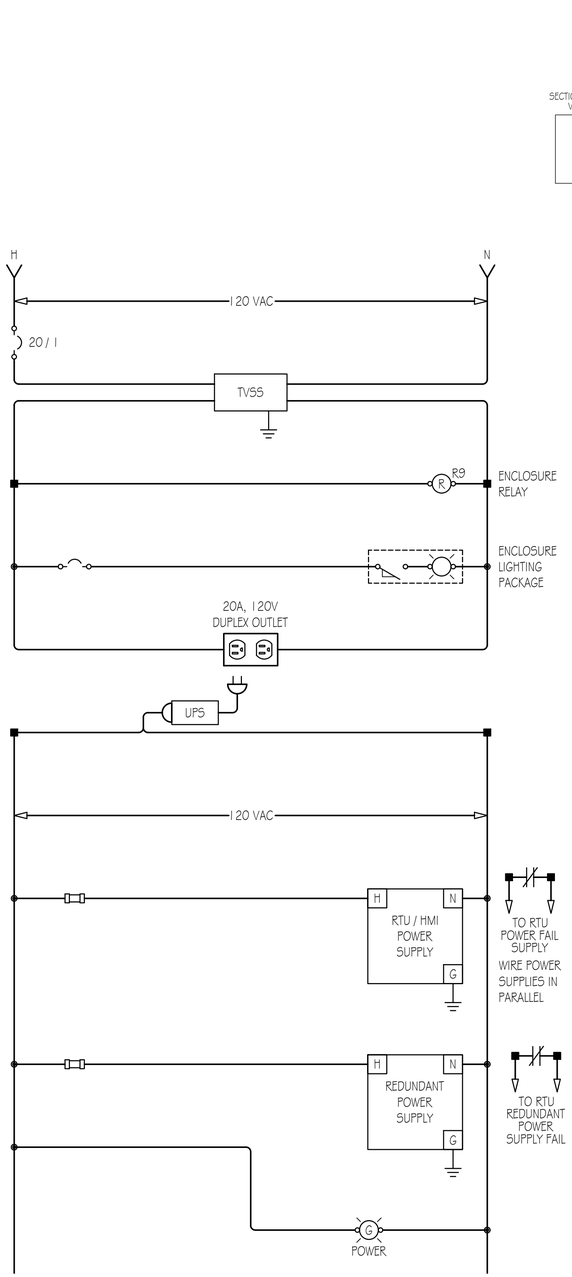
PROFESSIONAL ENGINEER
11573207-2202
ROBERT J. HILLYER
01/23/25
STATE OF UTAH

PERMIT SET 7/23/2025

ELECTRICAL DETAILS

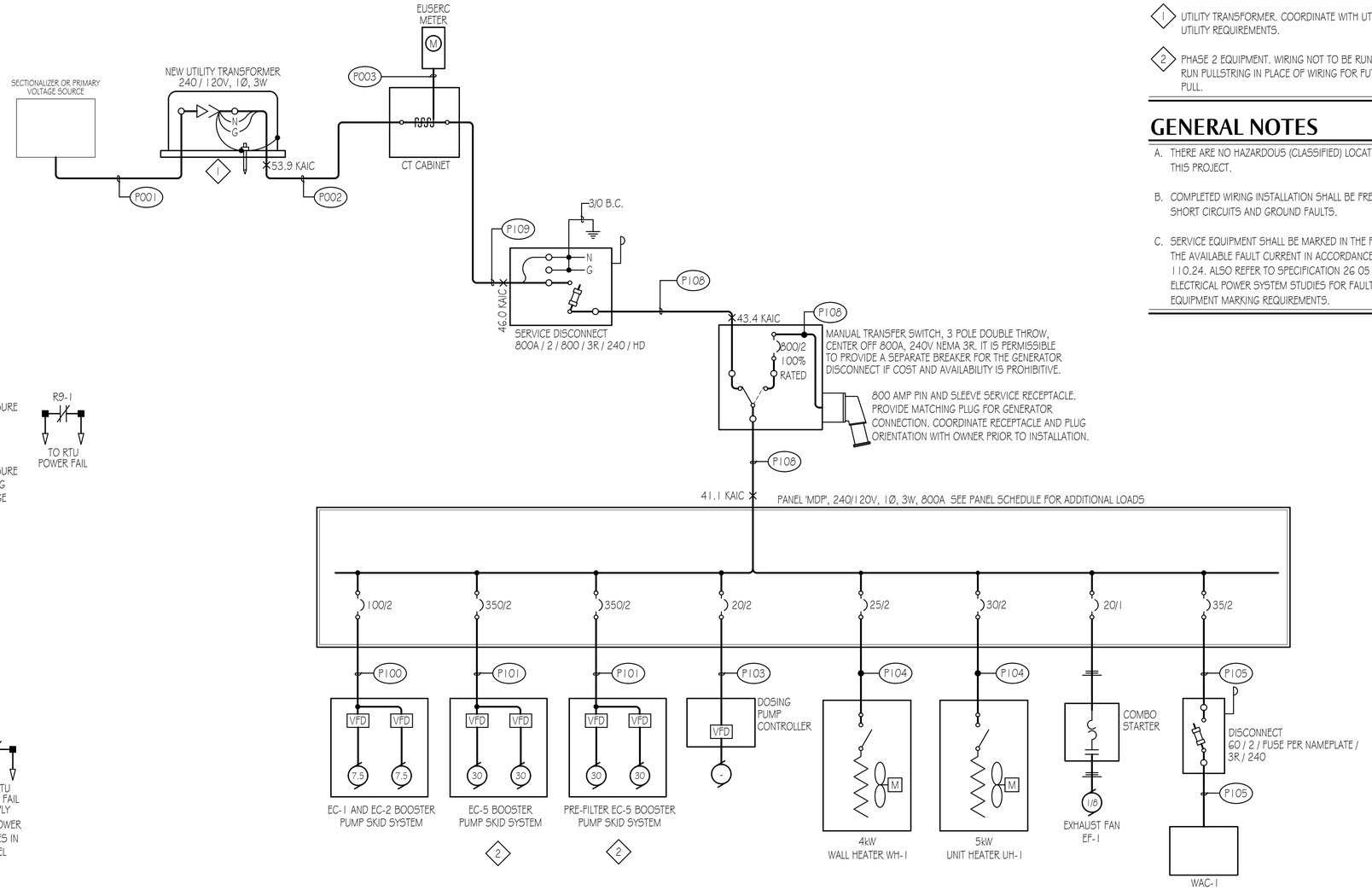
PROJECT NUMBER	PRINT DATE
14018B	7-14-2025
PROJECT MANAGER	DESIGNED BY
-	B. HILLYER

E-505



2 E-601 **RTU CONTROL DIAGRAM**

SCALE: NONE — TYPICAL OF 2



1 E-601 **BOOSTER BUILDING POWER ONE-LINE DIAGRAM**

SCALE: NONE

DRAWING NOTES

1. UTILITY TRANSFORMER. COORDINATE WITH UTILITY ALL UTILITY REQUIREMENTS.
2. PHASE 2 EQUIPMENT. WIRING NOT TO BE RUN AT THIS TIME. RUN PULLSTRING IN PLACE OF WIRING FOR FUTURE WIRE PULL.

GENERAL NOTES

A. THERE ARE NO HAZARDOUS (CLASSIFIED) LOCATIONS WITHIN THIS PROJECT.

B. COMPLETED WIRING INSTALLATION SHALL BE FREE FROM SHORT CIRCUITS AND GROUND FAULTS.

C. SERVICE EQUIPMENT SHALL BE MARKED IN THE FIELD WITH THE AVAILABLE FAULT CURRENT IN ACCORDANCE WITH NEC 110.24. ALSO REFER TO SPECIFICATION 26 05 07-ELECTRICAL POWER SYSTEM STUDIES FOR FAULT CURRENT EQUIPMENT MARKING REQUIREMENTS.

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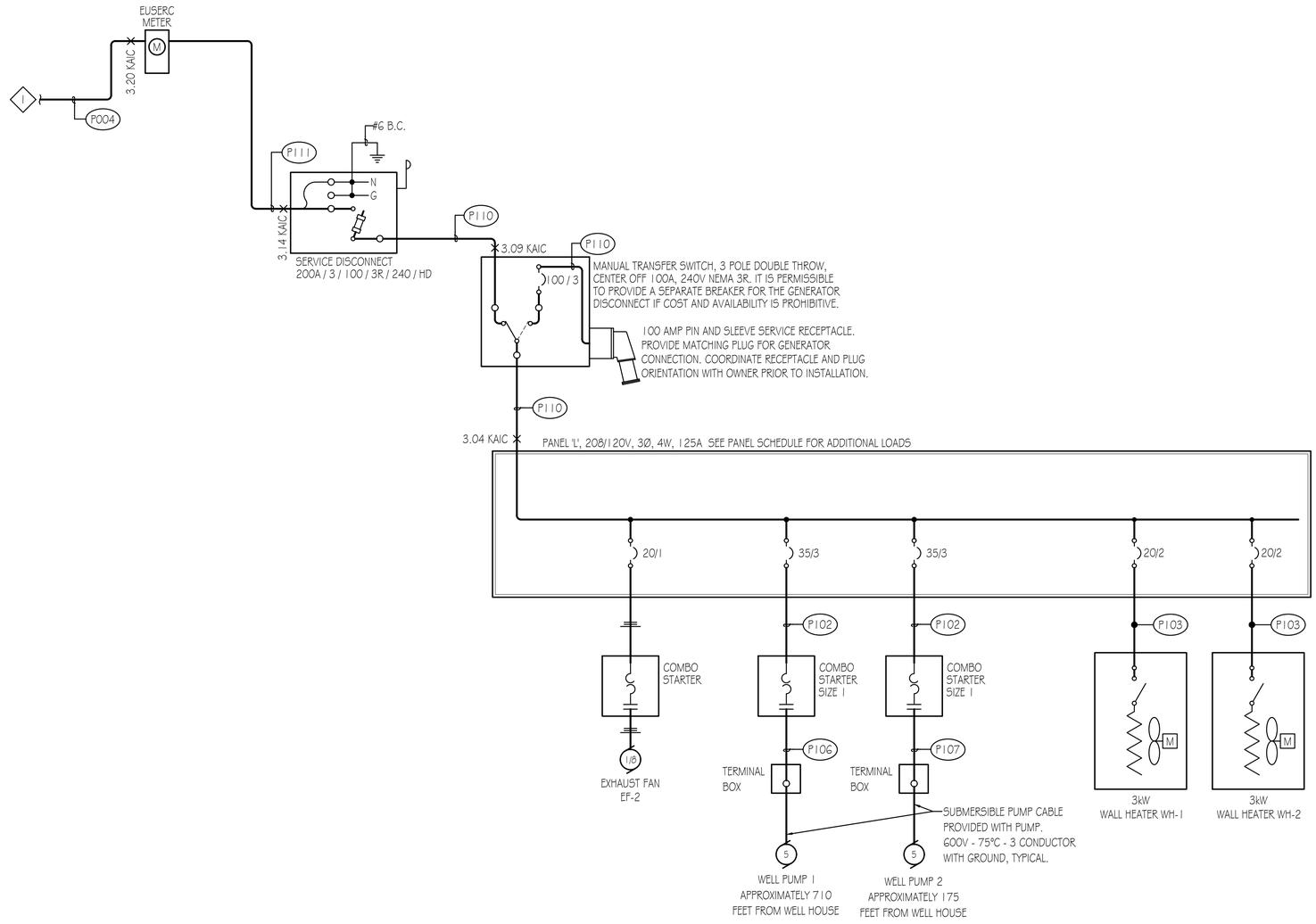
PERMIT SET 7/23/2025

ELECTRICAL ONE-LINE DIAGRAM

PROJECT NUMBER	PRINT DATE
14018B	7-14-2025
PROJECT MANAGER	DESIGNED BY
-	B. HILLYER

E-601

HEATH Engineering Company



1 E-602 **WELL HOUSE POWER ONE-LINE DIAGRAM**

SCALE: NONE

DRAWING NOTES

1. TO EXISTING UTILITY POWER POLE. COORDINATE WITH UTILITY ALL UTILITY REQUIREMENTS.

GENERAL NOTES

A. THERE ARE NO HAZARDOUS (CLASSIFIED) LOCATIONS WITHIN THIS PROJECT.

B. COMPLETED WIRING INSTALLATION SHALL BE FREE FROM SHORT CIRCUITS AND GROUND FAULTS.

C. SERVICE EQUIPMENT SHALL BE MARKED IN THE FIELD WITH THE AVAILABLE FAULT CURRENT IN ACCORDANCE WITH NEC 110.24. ALSO REFER TO SPECIFICATION 26 05 07- ELECTRICAL POWER SYSTEM STUDIES FOR FAULT CURRENT EQUIPMENT MARKING REQUIREMENTS.

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01/23/25
STATE OF UTAH

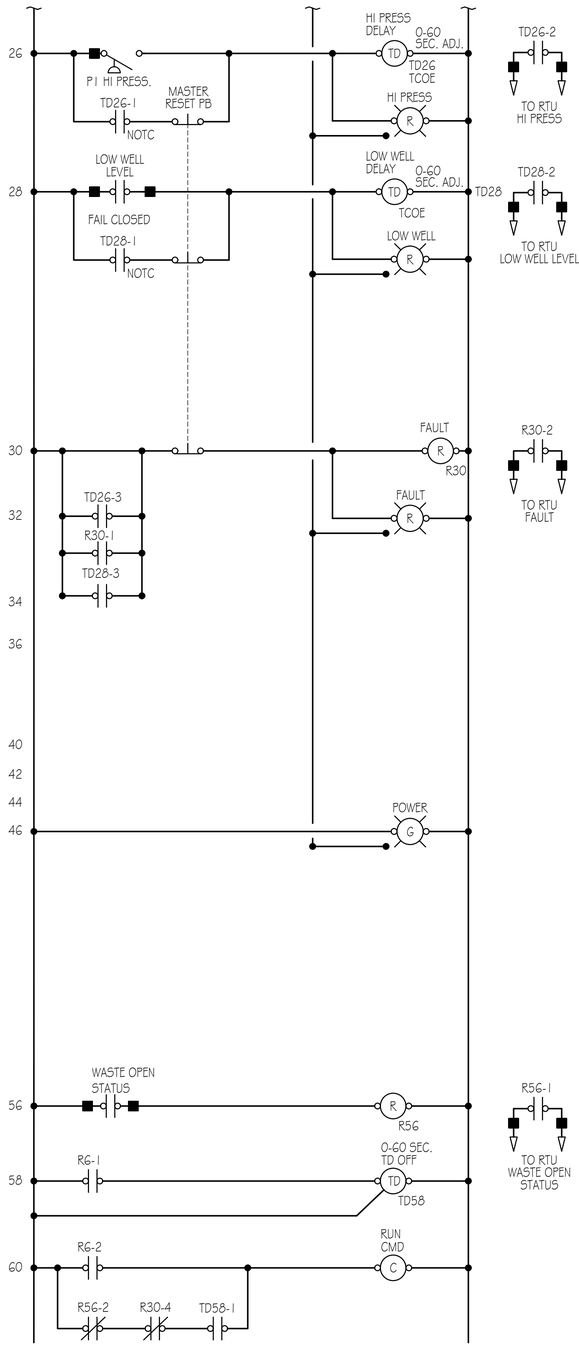
PERMIT SET 7/23/2025

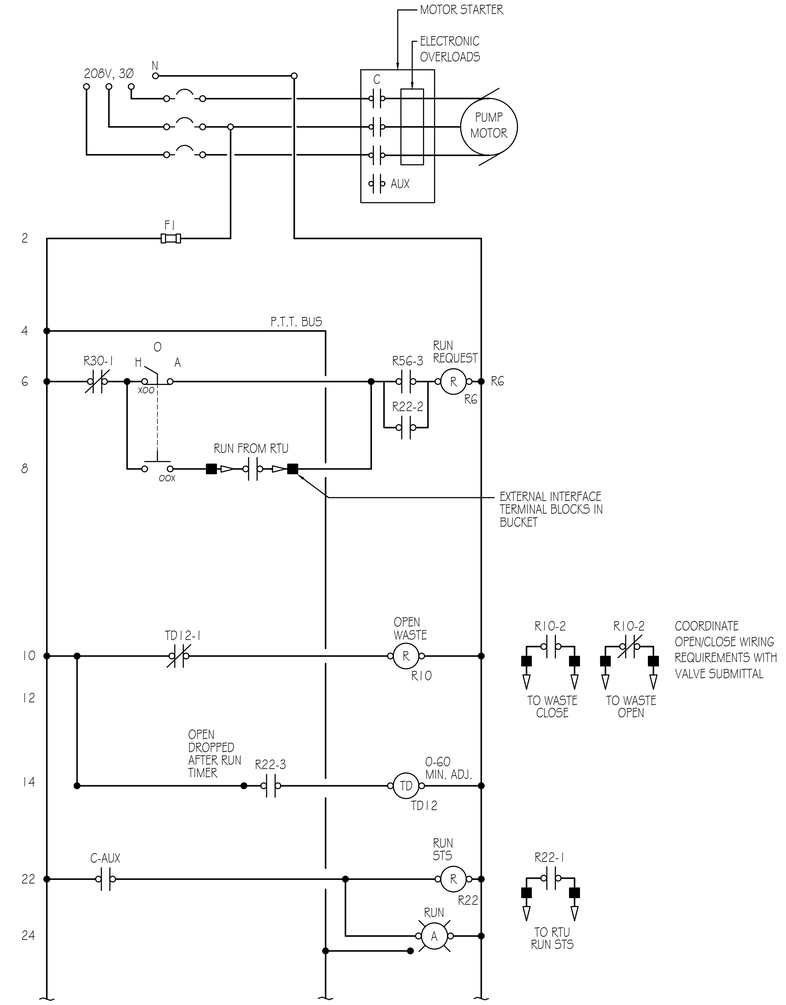
WIRING DIAGRAMS

PROJECT NUMBER	PRINT DATE
14018B	7-14-2025
PROJECT MANAGER	DESIGNED BY
-	B. HILLYER

E-602

HEATH Engineering Company





1 / E-1 WELL VFD WIRING DIAGRAM

SCALE: NONE — TYPICAL OF 2

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WIRING DIAGRAMS

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14018B	7-14-2025
PROJECT MANAGER	DESIGNED BY
-	B. HILLYER

E-603

HEATH Engineering Company

HVAC SYMBOL LEGEND

⟿	RETURN AIR OR EXHAUST DIRECTION	(C)	HOLDING COILING-MOTOR STARTER OR AUX. RELAY
⩘⩘⩘	OPPOSED BLADE DAMPER	(TS)	TIMER SWITCH
⫽⫽⫽	PARALLEL BLADE DAMPER	PS	PRESSURE SWITCH
O.A.	OUTSIDE AIR		SUPPLY DUCT (CROSS SECTION)
S.A.	SUPPLY AIR		RETURN AIR OR EXHAUST DUCT (CROSS SECTION)
E.A.	EXHAUST AIR		ROUND DUCT (CROSS SECTION)
V.A.	VENTILATION AIR	24"x12"	DUCT SIZE, INSIDE CLEAR DIMENSION IN INCHES
(T)	THERMOSTAT		DROP OR RISE IN SUPPLY DUCT
(S)	WALL SENSOR	⟶	SUPPLY AIR OR OUTSIDE AIR DIRECTION
(R)	RELAY		

GENERAL NOTES

1. EQUIPMENT MANUFACTURERS AND MODEL NUMBERS ON DRAWING SCHEDULES ARE PROVIDED FOR REFERENCE ONLY IN ORDER TO AID THE CONTRACTOR ESTABLISH SIZES. DO NOT LIMIT EQUIPMENT SELECTION TO SHOWN MAKES. APPROVED EQUAL MANUFACTURERS WILL BE ACCEPTED. REFERENCE DIV. 23 SPECIFICATIONS FOR OTHER APPROVED MANUFACTURERS.
2. SIZES OF EQUIPMENT PADS, FLOOR, ROOF, AND WALL PENETRATIONS ARE GIVEN FOR REFERENCE ONLY AND SHALL BE FIELD VERIFIED PRIOR TO FABRICATION OR ORDERING EQUIPMENT. COORDINATE ALL ROOF / FLOOR / WALL PENETRATIONS WITH STRUCTURAL ENGINEER.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE FINAL SIZE AND LOCATION OF ROOF AND WALL OPENINGS REQUIRED FOR THE HVAC EQUIPMENT INSTALLATION.
4. ALL EQUIPMENT MOTORS SHALL BE DERATED FOR AN ELEVATION OF 4600 FT ABOVE SEA LEVEL.
5. REFERENCE SECTION 230900 FOR HVAC CONTROL SEQUENCE.

ELECTRIC UNIT HEATER SCHEDULE

SYMBOL	BTUH OUTPUT	NOMINAL CFM	ELECTRICAL DATA					MARKEL MODEL	DUTY	REMARKS
			VOLTS	HZ	PHASE	AMPS	KW			
UH-1	17,100	400	240	60	1	20.8	5	H1H5505T	PUMP ROOM	TWO-STAGE, UNIT-MOUNTED THERMOSTAT. SET AT 45°F (ADJ.)

SEE SPECIFICATION SECTION 237600

EXHAUST FAN

SYMBOL	AIR FLOW CFM	TOTAL STATIC PRESS IN WC @ ALTITUDE	FAN MAX RPM	FAN ELECTRICAL				BHP	DRIVE	SONES	LWA	COOK MODEL	DUTY	REMARKS
				VOLTS	HERTZ	PHASE	MOTOR HP							
EF-1	200	0.5	1600	115	60	1	1/8	.05	DIRECT	7.3	65	90SQN17D (VF)	PUMP ROOM	EC MOTOR, FAN MOUNTED SPEED CONTROL. FURNISH WITH BACK DRAFT DAMPER.
EF-2	200	0.5	1600	115	60	1	1/8	.05	DIRECT	7.3	65	90SQN17D (VF)	WELL HOUSE	EC MOTOR, FAN MOUNTED SPEED CONTROL. FURNISH WITH BACK DRAFT DAMPER.

SEE SPECIFICATION SECTION 238200

FILTER SECTION

SYMBOL	FILTER SIZE	FILTER THICKNESS	FILTER TYPE	FARR MODEL	DUTY	NO. AND SIZE OF FILTERS	REMARKS
FS-1	12"x12"	2"	PLEATED	30-30	PUMP ROOM INTAKE	(1)12"x12"	SLIDE-IN FILTER RACK
FS-2	12"x12"	2"	PLEATED	30-30	WELL HOUSE INTAKE	(1)12"x12"	SLIDE-IN FILTER RACK

SEE SPECIFICATION SECTION 239000

LOUVER

SYMBOL	APPROXIMATE SIZE	DUTY	RUSKIN MODEL	REMARKS
L-1	12"x12"	PUMP ROOM INTAKE	ELFG375DX	-
L-2	12"x12"	PUMP ROOM EXHAUST	ELFG375DX	-
L-3	12"x12"	WELL HOUSE INTAKE	ELFG375DX	-
L-4	12"x12"	WELL HOUSE EXHAUST	ELFG375DX	-

SEE SPECIFICATION SECTION 233700

MOTORIZED DAMPERS

SYMBOL	DAMPER SIZE		BLADE ORIENTATION	RUSKIN MODEL	NORMAL POSITION	DUTY	REMARKS
	WIDTH (IN)	HEIGHT (IN)					
MD-1	12	12	OPPOSED	CD-50	CLOSED	PUMP ROOM	INTERLOCK WITH EF-1. FURNISH WITH 120 VOLT BELIMO DAMPER ACTUATOR SIZED TO ACCOMMODATE DAMPER SIZE.
MD-2	12	12	OPPOSED	CD-50	CLOSED	WELL HOUSE	INTERLOCK WITH EF-2. FURNISH WITH 120 VOLT BELIMO DAMPER ACTUATOR SIZED TO ACCOMMODATE DAMPER SIZE.

SEE SPECIFICATION SECTION 230900

WALL MOUNTED AIR CONDITIONING UNIT

SYMBOL	COOLING (1)		MIN. EER	ENTERING AIR		NOM. ACFM	ESP	ELECTRICAL								BARD MODEL	UNIT WEIGHT (LBS)	REMARKS
	STANDARD RATING TOTAL MBH	STANDARD RATING SENS. MBH		°Fdb	°Fwb			HEATER (KW)	VOLTS	HERTZ	PHASE	SUPPLY FAN HP	CONDENSER FAN HP	MCA	MOCP			
WAC-1	35.2	26.3	11.0	75	62	1150	0.1	5	230/208	60	1	1/2	1/5	33	35	W3GAY-A05YPXXX	450	FURNISH UNIT WITH JADE ECON-DB CONTROLLER, 2" MERV 8 FILTERS, FULL ECONOMIZER, SUPPLY REGISTER, AND RETURN GRILLE.

NOTES: (1) 95° F O.A.T.

SEE SPECIFICATION SECTION 236100

WALL HEATER

SYMBOL	MBH	DISCHARGE	WATTS	ELECTRICAL			REZNOR MODEL	REMARKS
				VOLTS	HERTZ	PHASE		
WH-1	13.6	HORIZONTAL	4000	240	60	1	EHA	1, 2, 3, 4
WH-2	10.2	HORIZONTAL	3000	240	60	1	EHA	1, 2, 3, 4
WH-3	10.2	HORIZONTAL	3000	240	60	1	EHA	1, 2, 3, 4

NOTES:
1. PROVIDE WITH BUILT IN THERMOSTAT
2. LOW PROFILE TYPE
3. MOUNT UNIT AT 2'-0" A.F.F. FIELD COORDINATE EXACT LOCATION.
4. OR EQUAL BY MARKEL OR KING ELECTRIC.

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COBABE RANCH AND EDEN CROSSING
WELL HOUSE AND BOOSTER STATION
(PWS. NO. 29132)
EDEN, UTAH

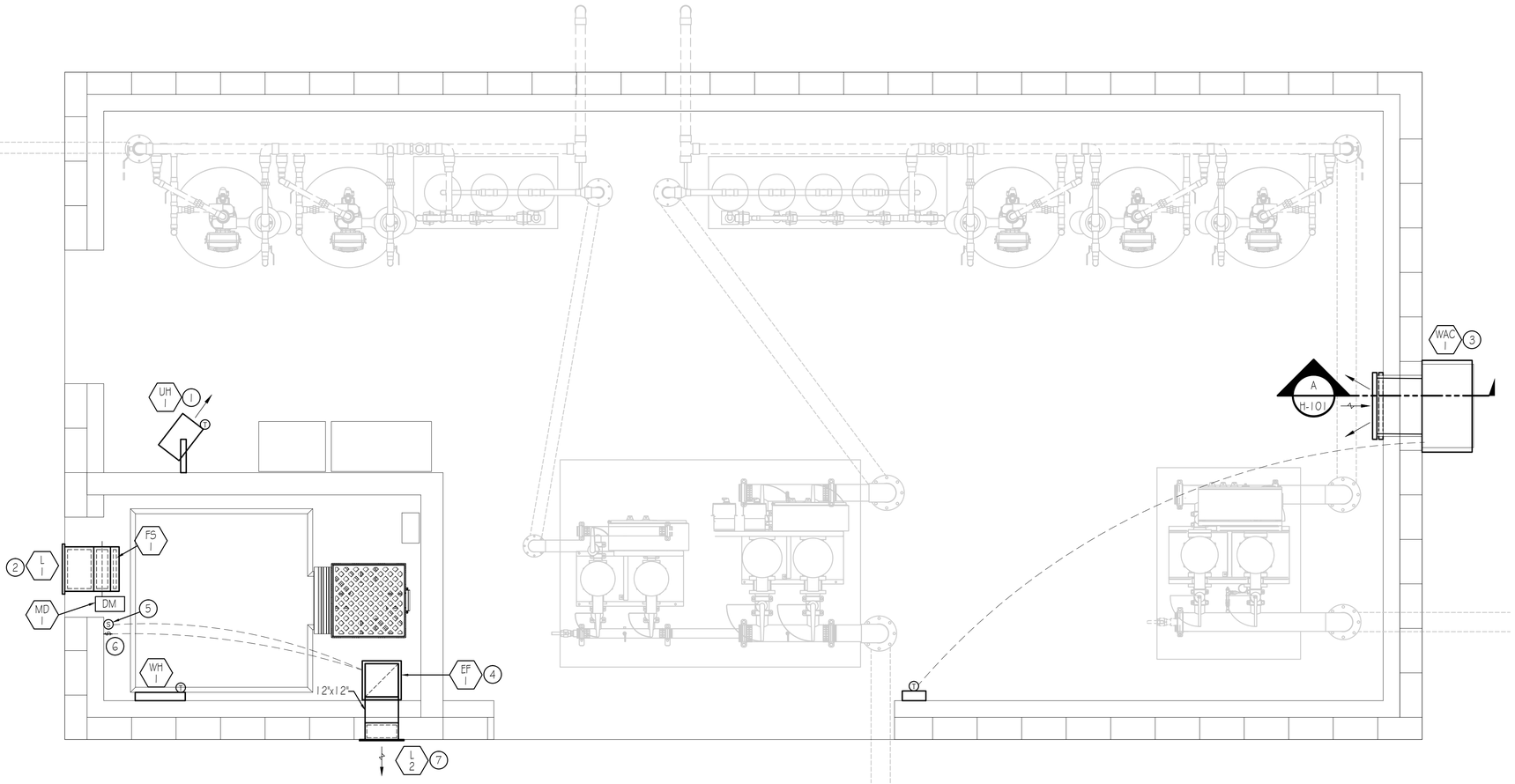
PROFESSIONAL ENGINEER
6047772-2202
KARSON DAVID HALVERSON
01/23/25
STATE OF UTAH

PERMIT SET 7/23/2025

HVAC EQUIPMENT SCHEDULES

PROJECT NUMBER	PRINT DATE
14018B	7-14-2025
PROJECT MANAGER	DESIGNED BY
-	K. HALVERSON

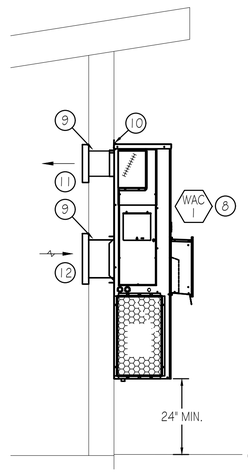
H-001



1 H-102 **BOOSTER BUILDING HVAC PLAN**

SCALE: 1/2" = 1'-0"

2 0 5



A H-102 **HVAC SECTION**

SCALE: 1/2" = 1'-0"

2 0 5

DRAWING NOTES

1. MOUNT UNIT HEATER AT HEIGHT AS RECOMMENDED BY VENDOR.
2. INSTALL LOUVER ABOVE THE DOOR. FIELD COORDINATE EXACT LOCATION.
3. REFERENCE SECTION A/H-101 FOR WAC-1 INSTALLATION NOTES.
4. 12"x12" EXHAUST DUCT TO START 12" A.F.F., EXTEND UP TO EF-1, AND THEN CONTINUE UP TO LOUVER L-2. TRANSITION AS REQUIRED AND USE FLEXIBLE CONNECTIONS AT EF-1 INLET AND OUTLET. INSTALL EF-1 APPROXIMATELY 48" A.F.F. FIELD COORDINATE EXACT LOCATION OF FAN AND DUCT DROP. BRACE DUCTWORK PER SMACNA GUIDELINES. REFERENCE DETAILS AND ELECTRICAL DRAWINGS FOR ADDITIONAL DETAIL.
5. EXHAUST FAN THERMOSTAT.
6. EXHAUST FAN TIMER SWITCH BY ELECTRICAL.
7. INSTALL LOUVER HIGH ON WALL. FIELD COORDINATE EXACT LOCATION.
8. INSTALL WALL-MOUNTED A/C UNIT HIGH ON WALL SUCH THAT THE BOTTOM OF THE UNIT IS A MINIMUM OF 24" ABOVE GRADE. SECURELY ANCHOR THE UNIT TO WALL AND SUPPORT STRUCTURE. INSTALL UNIT PER MANUFACTURER'S REQUIREMENTS. FIELD COORDINATE EXACT LOCATION. REFERENCE DETAIL 6 / H-501 FOR ADDITIONAL DETAIL.
9. PROVIDE SLEEVES IN WALL FOR DUCTWORK PENETRATIONS. SEE DETAIL 6 / H-501 AND STRUCTURAL DRAWINGS FOR ADDITIONAL DETAIL. FIELD COORDINATE EXACT DUCT SIZE AND LOCATION OF OPENINGS.
10. FLASH, CAULK, AND SEAL AROUND UNIT AND WALL PENETRATIONS, PER MANUFACTURER'S RECOMMENDATIONS.
11. S.A. DIFFUSER.
12. R.A. GRILLE.

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BOOSTER BUILDING HVAC PLAN

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H-102

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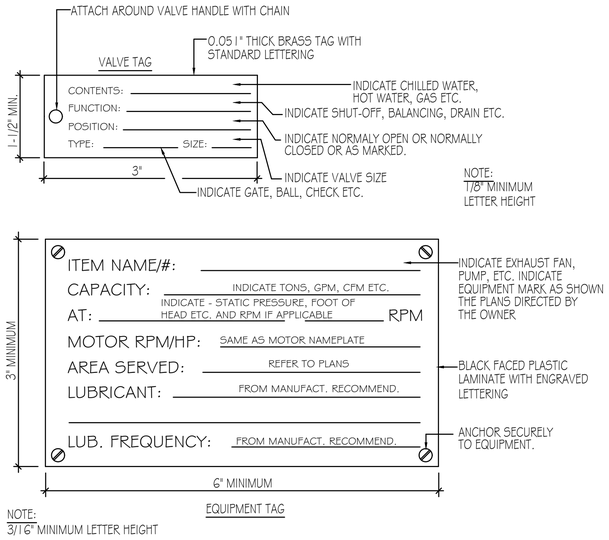


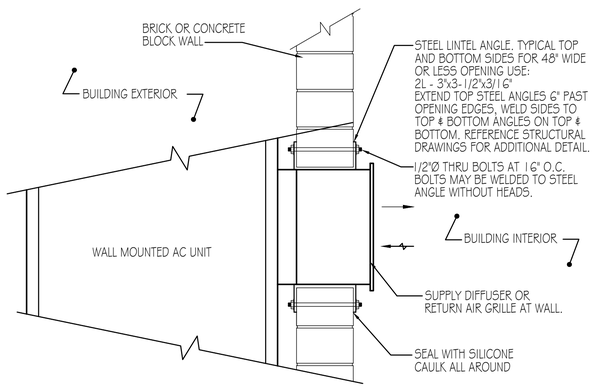
NOTE:
3/16" MINIMUM LETTER HEIGHT

5 / H-501 IDENTIFICATION TAG DETAIL
SCALE: NONE

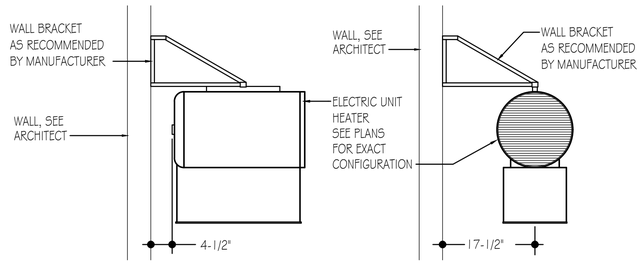
DIMENSION OF LONGEST SIDE, (INCHES)	SHEET METAL GAGE (ALL FOUR SIDES)	• TRANSVERSE REINFORCING: MINIMUM REINFORCING ANGLE SIZE & MAXIMUM LONGITUDINAL SPACING BETWEEN TRANSVERSE JOINTS &/OR INTERMEDIATE REINFORCING	AT JOINTS: MIN H, IN.	DRIVE SLIP / PLAIN S SLIP: RECOM-MENDED GAGE	HEMMED S SLIP: RECOM-MENDED GAGE	ALT. BAR SLIP: RECOM-MENDED GAGE	REIN-FORCED BAR SLIP: RECOM-MENDED GAGE	BAR SLIP / ANGLE SLIP: RECOM-MENDED GAGE	BAR SLIP / ANGLE SLIP: REINFORCED ANGLE SIZE	STD. SEAM / ANGLE REINFORCED STD. SEAM: REINFORCED ANGLE SIZE	POCKET LOCK / ANGLE REINFORCED POCKET LOCK: RECOM-MENDED GAGE	POCKET LOCK / ANGLE REINFORCED POCKET LOCK: REINFORCED ANGLE SIZE
UP THRU 12	24	NONE REQUIRED	1	26	26	24	24	24	NOT REQUIRED	NOT REQUIRED	24	NOT REQUIRED
13-18	24	NONE REQUIRED	1	24	24	24	24	24	NOT REQUIRED	NOT REQUIRED	24	NOT REQUIRED
19-30	24	1 x 1 x 1/8 @60in.	1	-	24	24	24	24	NOT REQUIRED	NOT REQUIRED	24	NOT REQUIRED
31-42	22	1 x 1 x 1/8 @60in.	1	-	-	22	22	22	NOT REQUIRED	NOT REQUIRED	22	NOT REQUIRED
43-54	22	1-1/2 x 1-1/2 x 1/8 @60in.	1-1/2	-	-	22	22	22	1-1/2 x 1-1/2 x 1/8	NOT REQUIRED	22	NOT REQUIRED
55-60	20	1-1/2 x 1-1/2 x 1/8 @60in.	1-1/2	-	-	-	22	22	1-1/2 x 1-1/2 x 1/8	NOT REQUIRED	22	NOT REQUIRED
61-84	20	1-1/2 x 1-1/2 x 1/8 @60in.	1-1/2	-	-	-	22	22	1-1/2 x 1-1/2 x 1/8	1-1/2 x 1-1/2 x 1/8	22	1-1/2 x 1-1/2 x 1/8

• TRANSVERSE REINFORCING SIZE IS DETERMINED BY DIMENSION OF SIDE TO WHICH ANGLE IS APPLIED.

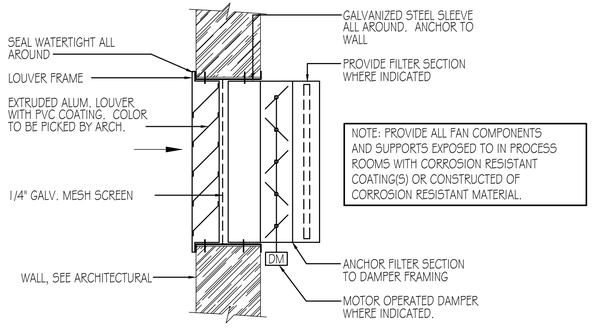
1 / H-501 DUCT CONSTRUCTION DETAIL
SCALE: NONE



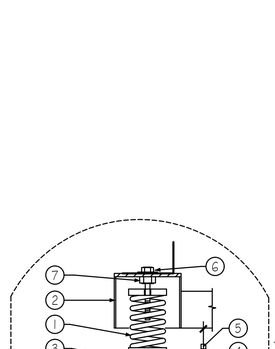
6 / H-501 DUCT PENETRATION DETAIL
SCALE: NONE



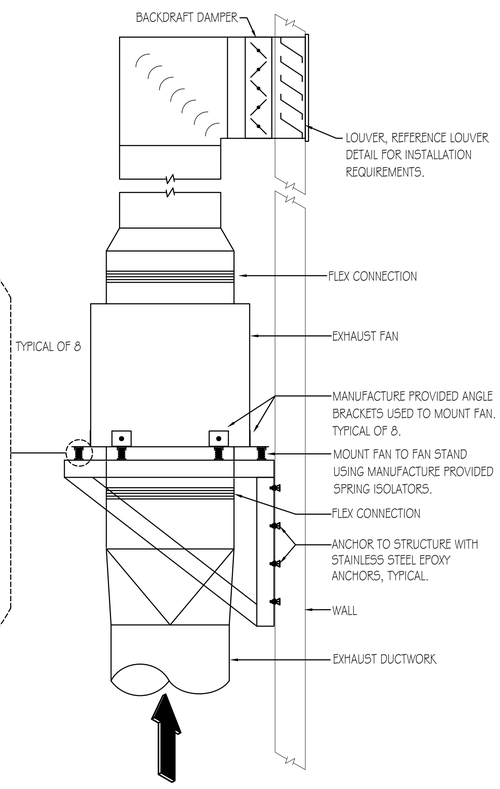
3 / H-501 UNIT HEATER MOUNTING DETAIL
SCALE: NONE



4 / H-501 INLET LOUVER WITH DAMPER AND FILTER DETAIL
SCALE: NONE



KEYED NOTES:
1. STEEL SPRING VIBRATION ISOLATOR
2. HEIGHT SAVING BRACKET
3. NEOPRENE WAFFLE MOUNT (TWO 1/4" THICK PADS WITH 1/16" STEEL SHIM BETWEEN)
4. 16"x 16"x 3/8" PLATE
5. 1" OPERATING HEIGHT
6. CAP SCREW SECURES BRACKET TO ISOLATOR ADJUSTING BOLT
7. ADJUSTMENT BOLT



2 / H-501 EXHAUST FAN DETAIL
SCALE: NONE

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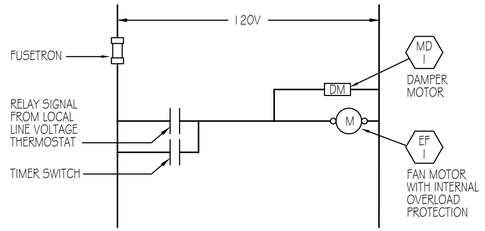
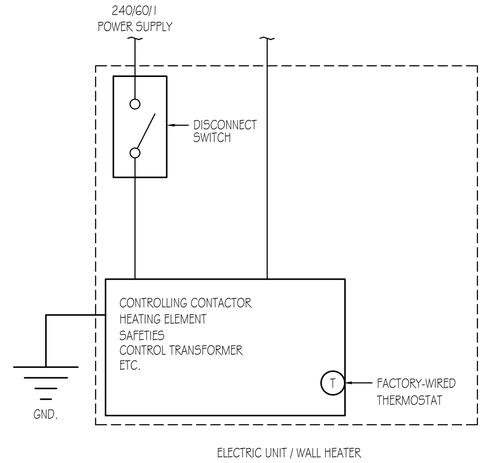


3 H-601 EF-1 VENTILATING SYSTEM CONTROL DIAGRAM

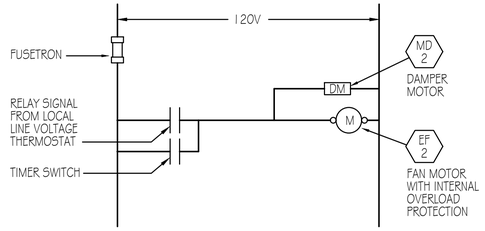
SCALE: NONE



ELECTRIC UNIT / WALL HEATER

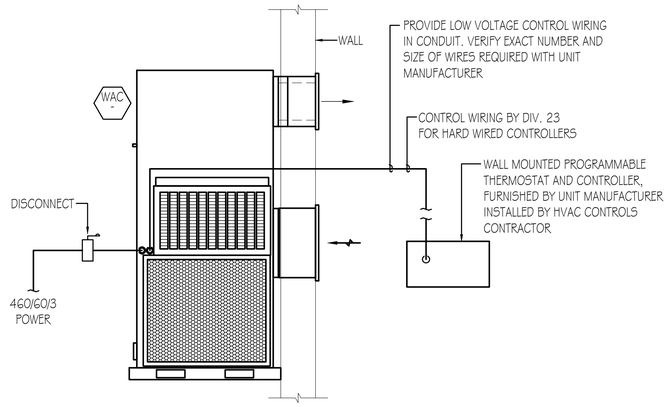
1 H-601 ELECTRIC UNIT / WALL HEATER CONTROL DIAGRAM

SCALE: NONE



4 H-601 EF-2 VENTILATING SYSTEM CONTROL DIAGRAM

SCALE: NONE



2 H-601 WALL MOUNTED AIR CONDITIONING UNIT CONTROL DIAGRAM

SCALE: NONE — SEE PLANS FOR EXACT CONFIGURATION

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H-601

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